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THE WESTERN FIELD SPARROW (*SPIZELLA*  
*PUSILLA ARENACEA* CHADBOURNE).

BY CHARLES W. RICHMOND.

*Plate III.*

THE WESTERN FIELD SPARROW, illustrated in this number of 'The Auk,' was first brought to the attention of ornithologists in 1886<sup>1</sup> by Dr. Arthur P. Chadbourne, who characterized it from two late autumn specimens collected at Laredo, Texas. Nothing was then known of the breeding plumage or summer range of the bird, but two years later Dr. C. Hart Merriam described<sup>2</sup> three breeding specimens, all males, obtained by Mr. Vernon Bailey at Fort Pierre, South Dakota, and Valentine, Nebraska. These examples were found to be so unlike the eastern Field Sparrow that Dr. Merriam was led to consider the western form specifically distinct and designated it *Spizella arenacea* (Chadbourne). Subsequent material, however, proved it to be of only subspecific importance, and it has since held this rank in the 'Check-List.'

The differences between the Western Field Sparrow and the typical eastern bird are chiefly in the greater dimensions and

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<sup>1</sup> Auk, III, April, 1886, 248-249.

<sup>2</sup> Auk, V, Oct., 1888, 402-403.

uniformly paler color of the former, with broader gray streak on the crown and almost completely gray ear-coverts. The tail is much longer, and the wings usually so, although in some individuals of the eastern bird this measurement nearly equals that of *arenacea*. The bill, as a rule, is somewhat larger in the western form, but not invariably so. The measurements of a typical western specimen and of an average eastern bird are given below:

	Wing.	Tail.	Tarsus.	Culmen.
<i>Spizella pusilla</i> . . .	2.45	2.35	.65	.33
<i>Spizella p. arenacea</i> . .	2.70	2.90	.72	.34

Texan and Mississippi Valley specimens of the Field Sparrow have a tendency to longer wings and tails than the eastern birds, but frequently without any corresponding paleness of plumage. Some of the Texan birds are, however, appreciably paler, but not enough so, and also too small, to refer to *arenacea*.

Worthen's Sparrow differs from both forms of the Field Sparrow in the total absence of a mesial gray crown stripe and brown post-ocular stripe, as well as in some minor details. The wings and tail are shorter than in *arenacea*, but longer than in average *pusilla*.

The geographical range of the Western Field Sparrow as defined in the last edition of the A. O. U. 'Check-List' is "Great Plains, from Texas to Montana and Dakota. Casual at New Orleans, La." The Louisiana specimen was shot in the winter of 1890-91, and was reported by Mr. Chapman to be a typical one (Auk, 1891, 318). Notwithstanding the rather extensive distribution of this form, little appears to be known of its habits or nesting, although we may safely consider them to be quite like those of the Field Sparrow. Specimens of the bird itself are not by any means numerous in collections.

Mr. J. P. N [orris]. has described eggs from Texas purporting to be those of this form<sup>1</sup> as indistinguishable "in size and general appearance" from those of *Spizella pusilla*. This record formed the basis of Mr. Davie's reference in his 'Nests and Eggs.' It

<sup>1</sup> Ornithologist and Oölogist, XIII, Dec. 1888, 188.

is almost certain, however, that true *arenacea* does not breed in Texas, and the eggs mentioned by Mr. Norris were doubtless those of the common Field Sparrow or of the slightly paler but equally small bird resident in some portions of that State. The eggs of true *arenacea* will probably be found to average somewhat larger than those of the eastern bird.

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## NOTES ON THE BIRDS OF FORT SHERMAN, IDAHO.

BY J. C. MERRILL,

*Major and Surgeon, U. S. Army.*

FORT SHERMAN is situated in the northern part of the State of Idaho in latitude  $47^{\circ} 40'$ , longitude  $116^{\circ} 30'$ , and at an elevation of a little less than two thousand feet. The Idaho-Montana boundary line, formed here by the divide of the Bitterroot Mountains, is about seventy miles distant due east; that of Idaho-Washington is about eleven miles west, and that of British Columbia about ninety-five miles north.

The fort is on the northern shore of the northwestern arm of Lake Coeur d'Alène, in the angle between the lake shore and the head of Spokane River, which is the outlet of the lake and empties into the Columbia about seventy-five miles north of west from the lake. The latter is nearly twenty-four miles in length, comparatively narrow in most parts, and its general trend is north and south. The Coeur d'Alène Mountains, north and east of the lake, are a continuation of the Bitterroot range; in them arises the Coeur d'Alène River, flowing into the southern end of the lake, and, still further south, the St. Joseph River forms the other principal tributary. The hills—they can hardly be called mountains—that encircle the lake are covered to the shores with a thick growth of pines and firs of two or three species, with tamaracks scattered throughout. Where streams flow into the lake there are often flats of a few acres in extent, subject to overflow in the

spring; here a growth of tules, water grasses, and willows, with a limited number of cottonwoods on the edges, form the only inviting spots for a considerable number of land birds that never from choice enter the surrounding pine forests, and a few marsh birds and Ducks also frequent them. A belt of cottonwoods extends along the Spokane River for some miles and affords a convenient route for many migrants. Except close along shore the northern part of the lake is very deep, and in the autumn most water birds soon find their way to the southern end where the marshy valley of the St. Joseph River offers congenial feeding and resting places. About every third winter the surface of the lake is frozen; as long as it is open a few Grebes, Gulls and Ducks remain, going to the always open Spokane River when forced to by the ice. A marsh of the character described is about a mile southwest of the fort and is sometimes referred to in this paper. About six miles to the north, a pine forest intervening, is the eastern end of the great Spokane prairie. Mica Peak, locally so-called, one of the highest mountains in the vicinity, is about eleven miles to the southwest, gradually rising from near the lake shore to a height of about three thousand feet above it; the summit is about a mile east of the Washington State line. Another and the true Mica Peak is about three miles further southwest; it is in Washington, and is a little higher than the Idaho peak of the same name.

In some respects the local climatic conditions resemble those of the Northern Cascade Range more nearly than those of any other part of the Rocky Mountains or its neighboring ranges in the United States. The winters usually are not severe and Chinook winds are frequent. The rainfall, including its equivalent in the heavy winter snowfall, is considerable and the large number of cloudy days adds to the faunal effect of the actual rain and snow. The avifauna is, as would be expected, essentially that of the Northern Rocky Mountains, but there is an element of Cascade Mountain forms, as shown by the presence of such species as *Xenopicus*, *Troglodytes hiemalis pacificus*, *Parus rufescens*, *Hesperocichla*, and others.

The little collecting that has been done in Idaho was chiefly in the southern and central parts of the State and has been well



brought together by Dr. C. Hart Merriam in Number 5 of the 'North American Fauna' series of the Department of Agriculture.<sup>1</sup> This report enumerates 156 species and throws much light on the summer fauna of Southern and Central Idaho. The present paper may be considered as supplementing it as to the winter avifauna and that of the northern part of the State. Since the publication of Dr. Merriam's paper Prof. B. W. Evermann made a small collection in the Sawtooth range district in September, 1894, and has kindly allowed me to look over his MS. notes. Two male *Pipilos*, identified as probably *megalonyx*, is the first record of this species in Idaho.

The following observations were made from November, 1894, until December, 1896. One hundred and sixty-seven species are enumerated, of which fifty, to each of which an asterisk is prefixed, have not, so far as I am aware, been previously taken in Idaho. I desire to express my obligations to Mr. William Brewster for kindly identifying some of the species; his opinions are incorporated in the text.

\* *Æchmophorus occidentalis*.—A single specimen taken.

\* *Colymbus holbælii*.—Resident but most common during migrations. A nearly completed nest was found in the marsh on May 18; when again visited on June 3 it contained four eggs, but was deserted, owing probably to the rapid fall of the lake level leaving it high and dry. The parents continued in the vicinity throughout the summer and probably bred again.

<sup>1</sup> One paper has been overlooked by Dr. Merriam in the preparation of his list. It has the somewhat misleading title of 'The Fauna of Montana Territory,' by J. G. Cooper, and may be found in the 'American Naturalist,' II, pp. 596-600; III, pp. 31-35; 73-84; also p. 224. The context shows that certain species were taken or observed in what is now the State of Idaho. Of such not included in the Merriam list are, to quote the names as given, *Falco columbarius*, *Turdus naevius*, *Sialia mexicana*, *Seiurus noveboracensis*, *Setophaga ruticilla*, *Sitta pygmaea*, *Parus rufescens*, *Curvirostra americana* var. *mexicana*, *Curvirostra leucoptera*, *Corvus caurinus*, *Columba fasciata*, *Ectopistes migratorius*. It may be remarked in regard to these species that the Water Thrush was undoubtedly the *notabilis* form; the Crossbill *L. curvirostra minor*, and the Crow *C. americanus*, and not what is now understood as *caurinus*. *Columba fasciata* was not satisfactorily identified.

*Seiurus auropallus* should also be added to the avifauna of Idaho, as Dr. Cooper states (Bull. N. O. C., II, 1877, p. 91) that it has been "recently recorded from Idaho." I do not know where this record is to be found.

\* *Podilymbus podiceps*.—Common on the lake in spring and autumn.

*Urinator imber*.—Resident and quite common except in winter.

\* *Larus argentatus smithsonianus*.—Several taken on the lake during fall and winter.

\* *Larus delawarensis*.—An adult taken January 6, and several young in September; not rare during winter. I saw no Gulls on the lake during summer.

\* *Larus philadelphia*.—One taken and several seen in November.

A small white Tern breeds about the lake, but I did not succeed in procuring any specimens for positive identification.

*Phalacrocorax dilophus cinnatus*.—Several Cormorants, probably of this form, were seen on September 19.

\* *Merganser americanus*.—Common during fall and winter.

*Merganser serrator*.—A single specimen taken.

\* *Lophodytes cucullatus*.—The most abundant of the Mergansers, frequenting especially the rivers, and in the autumn collecting in flocks of forty and fifty individuals.

*Anas boschas*.—The most common Duck in this vicinity, a few remaining throughout the winter.

*Anas americana*.—During the latter part of September this is one of the most common Ducks in the marshes at the southern end of the lake.

*Anas carolinensis*.—Quite common, especially during the migrations.

*Anas cyanoptera*.—Rare. A female with several young two or three days old seen June 11.

*Spatula clypeata*.—Common. Said to have been unusually abundant in the autumn of 1894. About twenty-five were seen about the fort on June 1; they were mostly paired and had perhaps been driven out of the St. Joseph marshes, where they breed, by the unusually high water.

\* *Dafila acuta*.—Common in migrations.

\* *Aix sponsa*.—Common summer visitor, especially abundant at the southern end of the lake during the early autumn.

\* *Aythya collaris*.—Seems to be more common than the other 'Blue-bills,' one or both of which occur, but were not certainly identified.

\* *Clangula islandica*.—Abundant throughout the winter. All the Golden-eyes seen by me were of this species, although the other doubtless occurs.

\* *Charitonetta albeola*.—Common during winter.

\* *Histrionicus histrionicus*.—Rare, but occasionally taken on the St. Joseph and Coeur d'Alène Rivers.

\* *Erismatura jamaicensis*.—Not uncommon in spring and autumn.

*Branta canadensis*.—Common in spring, rare in autumn. The most abundant species of Goose, especially on the prairie and at the southern end of the lake. I have seen them as early as February 22, although the middle of March is the more usual time of their arrival. A few pairs nest near the lake, but much less frequently than a few years ago, owing to the increase of settlers. Very few Geese are seen during the fall flight

as at this season they, as well as many Ducks, pass south over the open prairie country about fifty miles west of the lake.

Hunters have told me that the White-fronted and Snow Geese are sometimes shot, but that they are decidedly rare.

*Olor sp.*?—In the spring Swans are sometimes quite common on the marshes bordering the rivers at the southern end of the lake and in the lake itself. I was unable to examine any specimens for identification.

\* *Botaurus lentiginosus*.—Rather common in suitable localities about the lake.

*Grus mexicana*.—Not uncommon during the migrations, and a few pairs probably breed near the southern end of the lake.

*Porzana carolina*.—Not rare in the marshes; breeds.

*Fulica americana*.—Common, especially in autumn.

*Phalaropus lobatus*.—Occurs during the latter part of August and early in September on the lake, sometimes in great numbers, but passes through rapidly.

*Recurvirostra americana*.—A pair seen and one taken early in September.

*Gallinago delicata*.—Usually rather uncommon, but occurring in considerable numbers during the autumn of 1896. They appeared during the last week in August and were abundant until the middle of September, affording fine sport. A second flight of somewhat larger and darker birds appeared on October 22 and remained about two weeks, the last one being seen on November 5. I am inclined to think that the first flight was of birds breeding in the general vicinity, the second, of birds from more northern localities.

\* *Macrorhamphus griseus*.—Five specimens, taken September 12 on the St. Joseph marshes, were decidedly of the eastern form.

*Tringa maculata*.—Common in 1896 from the last of August until early in October. Abundant on September 12, when about 125 were shot. Many were in flocks of considerable size, not a common habit with this species.

\* *Tringa minutilla*.—Three taken August 15.

*Ereunetes occidentalis*.—One taken in company with the preceding.

*Totanus melanoleucus*.—A rather common fall migrant. One heard on June 20.

*Totanus solitarius*.—A young bird taken August 26.

\* *Bartramia longicauda*.—Breeds not uncommonly on the prairie north of the fort. They begin to leave for the South about the twentieth of July.

*Actitis macularia*.—Common summer visitor. Several nests were found near the fort.

*Numenius longirostris*.—Not uncommon on the prairie, arriving during the latter part of March.

\* *Squatarola squatarola*.—Four taken September 12 on the St. Joseph marshes.

\* *Charadrius dominicus*.—Usually rare. A large flight passed through northern Idaho and eastern Washington from the 15th to 20th of September, 1896. This was so uncommon that the local papers had notices of their presence, with highly original accounts of the birds' usual haunts and habits.

*Ægialitis vocifera*.—A few pairs breed on the prairie near the Spokane River.

*Dendragapus obscurus richardsonii*.—Occasionally found about the fort, but more common a few miles away, where they are not hunted so much. Breeds from lake level to the tops of the surrounding mountains. On July 1, near the base of Mica Peak, a brood of nearly grown young was seen; the next day, just below the summit, a female with a brood of chicks was found; the latter at once scattered in the grass and the parent, to obtain a better view of what was going on, flew up and alighted on the pack of one of the mules.

*Dendragapus franklinii*.—In the autumn of 1894 about forty specimens of this beautiful Grouse were brought in for sale by a ranchman, who said that he killed them on Canfield's Butte, a high hill a short distance northeast of the fort. While hunting near the southern end of Lake Pend d'Oreille the settlers told me that the 'fool hen' was rather common in the surrounding woods, but I did not happen to see any.

*Bonasa umbellus togata*.—Exceedingly abundant, much more so than I have ever found any form of the Ruffed Grouse. Many are killed by ranchmen and others over dogs trained to tree the birds, and the local market is plentifully supplied. One man told me that he no longer cared for them on his own table, but that he still fed his dogs on them!

*Pediocætes phasianellus columbianus*.—Quite common in all suitable localities, particularly about ranches on the extensive prairie north of the fort. In the winter it penetrates into the pine woods for considerable distances, passing the nights and the greater portion of stormy days in the trees.

*Zenaidura macroura*.—Not common, but generally distributed in the vicinity.

*Cathartes aura*.—A few are seen at intervals during the summer, arriving about the middle of April and leaving in September.

*Circus hudsonius*.—Not uncommon in autumn.

*Accipiter velox*.—One taken May 15.

*Accipiter atricapillus*.—Rather common during the migrations and winter, and probably breeds, as I have taken a specimen as late as May 30. Especially abundant during the early part of the winter of 1896-97, many being killed, while attacking chickens, by ranchmen and others. It may be remarked that Snowy Owls were unusually common about the same time, and that a specimen of *Falco rusticolus* was shot at Spokane, Wash., about twenty-five miles distant.

*Buteo swainsoni*.—A young bird taken September 14.

\* *Archibuteo lagopus sancti-johannis*.—Occasionally seen in early spring and late autumn.

*Aquila chrysaetos*.—Occurs sparingly throughout the year.

*Haliaeetus leucocephalus*.—A few pairs breed about the lake. An adult seen on February 5.

*Falco mexicanus*.—Rare; taken in September.

\* *Falco richardsonii*.—Of a male taken August 20 Mr. Brewster remarks: "This specimen is unusually dark and richly colored," but the wing markings were typical of the species. A young female was taken October 1.

*Falco sparverius deserticolus*.—The Sparrow Hawk arrives early in April and is common by the 15th-20th; breeds. With the exception of this species and the Goshawk and Osprey, Hawks are remarkably scarce about Fort Sherman, although apparently there is an abundant supply of food at all seasons.

*Pandion haliaetus carolinensis*.—First observed April 25 and frequently seen thereafter during the summer.

*Asio wilsonianus*.—A single specimen examined.

*Asio accipitrinus*.—This Owl is frequently flushed on the prairie and marshes in the autumn.

\* *Nyctala tengmalmi richardsoni*.—Two fine specimens are in Mr. Shallis's local collection which were taken early in the spring of 1894 on the prairie about seven miles from the fort. These, and a third specimen brought to him some years ago, are the only ones Mr. Shallis has seen.

\* *Nyctala acadica*.—A specimen taken January 19; its stomach contained two *Hesperomys*. During the spring its notes are frequently heard at night in the deep woods bordering the lake.

*Megascops asio subsp.?*—Screech Owls were occasionally heard in and about the fort, doubtless the *macfarlanei* form. They were quite rare, apparently.

*Bubo virginianus subarcticus*.

*Bubo virginianus saturatus*.—Both forms of the Great-horned Owl occur here commonly, and, judging from the specimens I have examined, in about equal numbers.

*Nyctea nyctea*.—Not uncommon in some winters, but irregular and uncertain. In December, 1896, there was a general migration of Snowy Owls into northern Idaho, Oregon and Washington and dozens were killed.

\* *Glaucidium gnoma*.—Not uncommon and a resident.

\* *Coccyzus americanus occidentalis*.—One seen July 30, 1895.

*Ceryle alcyon*.—Common during summer. A few pass the winter but most return from the South about the middle of April.

*Dryobates villosus hyloscopus*.—Abundant during winter, and more often seen at that season than all other Woodpeckers combined. Females were more common than males in the proportion of at least four or five to one. A series of specimens are of greater size than the usual average of



this bird. Cabanis's Woodpecker is here very unsuspicious, in marked contrast to its behavior in some other regions. After the first of March they are much less common and they breed but sparingly near the fort. Two nests found June 15 contained young, a late date.

*Dryobates pubescens homorus*.—Rather uncommon resident, breeding sparingly. Specimens taken here differ from all of the recognized forms in some respects.

*Xenopicus albolaryvatus*.—A rare resident.

*Picoides arcticus*.—A fairly common resident, especially on the higher parts of the hills, where in winter I have seen many nesting excavations undoubtedly made by this bird, which shows a marked partiality for locating them near the base of slender pine stubs. Mr. Brewster informs me that the bills of specimens taken at Fort Sherman are longer and slenderer than in eastern examples, but less so than in the series I took at Fort Klamath, Oregon.

\* *Sphyrapicus varius nuchalis*.—A few pairs breed among the cottonwoods bordering the lake near its outlet and along the river.

*Ceophloeus pileatus*.—A rather common resident, more plentiful in the deep woods.

*Melanerpes torquatus*.—Arriving early in May, Lewis's Woodpecker soon becomes common and is generally distributed, breeding in cottonwoods as well as in pines.

*Colaptes cafer*.—Common summer visitor arriving late in March, though a few remain throughout the winter. Breeds from lake level up to the summit of Mica Peak. Dr. Allen, in the map accompanying his paper on the Flickers,<sup>1</sup> places northern Idaho in the habitat of *C. auratus cafer*, or *hybridus*, as it was formerly called; but all the specimens taken at Fort Sherman, both breeding and migrating birds, were pure *cafer*.

\* *Chordeiles virginianus*.—Arriving about the first of June, few are seen until the 12th or 15th, when they suddenly become common, and so remain until early in August, when more arrive from the north. They are abundant until the end of the month, when most leave, a few stragglers being seen until the middle of September.

In regard to some skins collected here Mr. Brewster writes: "This series, as a whole, seems to me to be referable to *virginianus*, although two or three of the females have too much gray on the back and wings to be typical. The male, on the other hand, is a typical *virginianus*."

\* *Chætura vauxii*.—This Swift arrives early in May and may be seen almost daily during the month, generally singly. About July 20 they again appear and pass rapidly to the south, though I have seen one as late as August 31. While none were observed during the breeding

<sup>1</sup> 'The North American Species of the Genus *Colaptes*,' etc. Bull. Am. Mus. Nat. Hist., IV, map facing p. 24.



season I have little doubt that some remain, as late in May I have watched them apparently breaking off dead twigs near the tops of high cottonwoods, though this may have been in play. This, and the western Montana record in Bendire's 'Life Histories' (Vol. II. p. 183), considerably extend to the eastward the known range of this species. I have frequently seen Swifts along the Yellowstone River in Montana but have been unable to secure any for identification.

\* *Trochilus alexandri*. — Fairly common late in May, especially about the low, lavender-colored blossoms of the camass. A few pairs remain to breed.

\* *Selasphorus rufus*. — A common spring migrant, probably breeding. Found most frequently about blossoms of cherry trees in the yards about the officers' quarters. I have rarely seen this Hummer outside the fort, or the other two within it.

\* *Stellula calliope*. — The most common of the Hummers at Fort Sherman, both during the spring migration and the nesting season, their arrival in both years coinciding with the first blossoming of the wild hawthorn.

A good many Hummers, probably of the three species, pass through to the south during the latter part of August.

*Tyrannus tyrannus*. — Arriving during the last week in May, the King-bird at once becomes fairly common among the cottonwoods bordering the river, and in which it nests.

*Tyrannus verticalis*. — Rare; but a pair or two breed each year near the fort.

*Contopus borealis*. — Breeds sparingly at a height of several hundred feet above lake level.

*Contopus richardsonii*. — Very common, both in pine woods and in cottonwoods bordering the river.

\* *Empidonax hammondi*. — Northern Idaho must be near the center of abundance of this Flycatcher, and it is far more plentiful here than I have found it to be in Montana and Oregon. Arriving early in May, its habits here are somewhat peculiar, for it is as common among young cottonwoods and willows along the river and in and near swamps — just such places as *E. traillii* haunts — as in dry woods among pines, in which it is generally seen in the higher branches. It breeds in the latter situations, and I also took a good series of nests in young cottonwoods and aspens, some not more than two or three feet above the ground or water. When in pines the nest is usually thirty or forty feet from the ground, saddled on a horizontal dead branch several feet from the trunk, and is much like a *Contopus* nest. When placed in a young cottonwood the nest is more like that of *E. wrightii*, near the ground and generally against the trunk. I found Hammond's Flycatcher to be by no means as shy as other observers have noted; in fact, it is here one of the most common and, for an *Empidonax*, conspicuous of the summer

visitors, its notes being heard almost everywhere. Of a number of sets of eggs collected at Fort Sherman none were entirely unspotted but a majority were marked at the larger end, more or less distinctly, with delicate light brown dots.

*Empidonax wrightii*. — Only a single specimen taken; this was on May 17.

\* *Otocoris alpestris leucolæma*. — A typical female taken September 28, on the prairie. This was one of a number of Horned Larks collected on the same day and at the same place, all the others being of the next form.

\* *Otocoris alpestris merrilli*. — Careful search failed to reveal the presence of either form of Horned Lark during the winter, though it is probable that *leucolæma* occasionally occurs about ranch yards at that season. The present one returns in March, and during spring and summer is very common on the prairie, but none were seen at any time about the post gardens and adjoining fields, apparently equally suited to their habits. When grouse shooting in August these Larks were often flushed in corn and potato fields on the prairie where they sought shelter from the intense heat of the sun. Later they are found in the open prairie, stubble or ploughed land, collecting in flocks of twenty, forty or more.

Referring to a series of skins collected here, Mr. Brewster writes: "Specimens from Fort Sherman appear to be referable to *O. a. merrilli* although they are not typical, having the dorsal streaking much less pronounced than in Klamath birds. The autumnal examples are also more olivaceous above than the latter."

*Pica pica hudsonica*. — Not uncommon in winter, a few individuals making daily visits to the back yards of the quarters and to the garbage pile a few hundred yards outside the fort. There was a decided increase in their numbers about the middle of February, but they were rarely seen after March, and none appear to breed near the fort.

*Cyanocitta stelleri annectens*. — Fairly common about the fort in spring and autumn, a few passing the winter. It does not appear to breed at lake level but several pairs were seen early in July on Mica Peak, first at an elevation of about 1500 feet above the lake and thence upward to the summit. These Jays are typical *annectens*.

*Perisoreus canadensis capitalis*. — Rather common resident. A pair was seen collecting building material for a nest in a young pine on April 17, near Hoodoo Lake, about forty miles from the fort, but I was unable to return to secure it.

Mr. Brewster informs me that some skins sent him were much darker than Colorado specimens and had the dark occipital band broader.

*Corvus corax sinuatus*. — Probably resident; seen occasionally during the winter.

*Corvus americanus*. — Common during the migrations, a few pairs breeding near the edge of the prairie.

*Nucifraga columbiana*.—Probably owing to the identity of their principal winter food this species and the Crossbill were coincidentally abundant during the winter of 1894-95, very rare during that of 1895-96, and again common during so much of the winter of 1896-97 as I was at the fort, these periods being marked by the abundance or failure of the crop of cones of a common pine, upon the seeds of which both species chiefly fed. At other seasons Clark's Nutcracker appeared irregularly, probably wandering down from the surrounding hills, as, early in July, I saw several families on the higher parts of Mica Peak. For the first time in my experience in the Northwest I found this usually shy and suspicious bird to be quite tame in winter, visiting the yards of the houses for such scraps as were to be found; and they were especially fond of pecking at bones left on the surface of the snow by dogs. Several were caught by cats and one by a soldier in his hands.

(*To be concluded.*)

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## BIRDS OBSERVED ON A COLLECTING TRIP TO BERMUDEZ, VENEZUELA.

BY WILLIAM HENRY PHELPS.

*With Critical Notes and Descriptions of Two New Species, by Frank  
M. Chapman.*

IN THE year 1877 Dr. Adolfo Ernst<sup>1</sup> of Caracas divided Venezuela into four avifaunal districts: Eastern, Central, Cordilleran, and Lowland. The first comprises the group of mountains lying in the northeastern corner of the country, and is separated from the central district by the low country about Barcelona. The central district comprises the mountainous region along the northern coast, as far west as Barquisimeto. The high mountains to the west of this point are cordilleran and have affinities with the fauna of Colombia. The lowland region comprises all of that rolling country of plains and forests lying between this mountainous region of the north and the Orinoco River. The birds south of the river are Brazilian in their affinities and are

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<sup>1</sup> Estudios sobre la Flora y Fauna de Venezuela. Caracas. 1877, p. 287.

not comprised in any of the foregoing divisions. This separation into districts was chiefly based on collections made by Mr. A. Goering<sup>1</sup> over a large part of the country. To that enterprising collector we are indebted for almost all the knowledge we have of the birds of this interesting country, even up to the present day.

It is the first of these districts, the eastern, that most interests us, for it was in the mountains of the State of Bermudez that I studied the birds during a few weeks in the summer of 1896. I chose this locality because it seemed to present, besides a rich avifauna, special problems of interest. Perhaps the most interesting of these was the relation of the birds of the mainland to those of the islands of Trinidad and Margarita.

The island of Trinidad lies off the eastern coast and is distant but seven miles from the mainland. The birds of this island are perhaps better known than those of any other part of the tropics. This is because of its accessibility, its rich avifauna and its offering of comforts to the traveller which are rare in tropical South America. In marked contrast is the scanty knowledge of the birds of the adjoining mainland, of that whole group of mountains comprised within the territory designated, by Dr. Ernst, as the eastern district.

Lying off the northern coast, seventeen miles from the mainland, is the island of Margarita, the avifauna of which was a sealed book until Lieut. Wirt Robinson<sup>2</sup> visited it in the summer of 1895. In size the island is somewhat smaller than Trinidad but in aspect there is little resemblance, it being for the most part desert.

Two collections, only, have been made on the mainland adjoining these two islands. In the winter of 1866-67, Mr. A. Goering made a trip of several months, penetrating the interior,

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<sup>1</sup> On Venezuelan Birds collected by Mr. A. Goering. By F. L. Sclater and Osbert Salvin. P. Z. S., 1868, pp. 165-173, and 626-632; 1869, pp. 250-259; and 1870, pp. 779-788.

<sup>2</sup> An Annotated List of Birds observed on the Island of Margarita, and at Guanta and Laguayra, Venezuela. With critical notes and descriptions of new species by Charles W. Richmond. Proc. U. S. Nat. Mus., XVIII, pp. 649-685, Pl. XXXIII.

from Carúpano, as far as Caripe. Unfortunately a large part of this collection was lost in transportation. Mrs. H. H. Smith<sup>1</sup> spent ten days at Carúpano and El Pilar in November, 1891.

I chose Cumaná as my starting point, from where I penetrated the interior almost to the Orinoco lowlands.

*Cumaná.*—Only three days were spent in collecting at this place, August 11, 12, and 14. The character of the soil and vegetation of the country lying between the water's edge and the summit of the range of hills, which lies about five miles back from the coast, is totally different from what is found throughout the mountainous interior. Although in this part of Venezuela it rains nearly every day from June to October, this strip of land along the coast seems to be freer from the rains and has the appearance of a dry desert, owing to the character of the rock and soil. There are no forests but in their place is cactus scrub extending for miles in every direction, extremely difficult to penetrate except along the beaten paths. Besides the cactus there is little vegetation except a stunted species of tree. The Manzanares River flows across this plain and into the sea at Cumaná. Along the very banks of this river are cocoanuts, bamboos and large trees, but these only grow close to the water.

As might be expected, this region has an avifauna peculiar to itself. The following species seem to be characteristic of what may be called the coastal zone:

*Cardinalis phoeniceus*  
*Euetheia omissa*

*Doleromyia fallax*  
*Scardafella squamosa*

*Cumanacoa.*—Twenty miles into the interior as the bird flies, and twice that by the mule trail, lies the village of Cumanacoa. A greater contrast to the coast region could hardly be imagined. The town lies in the broad valley of the Manzanares River, where, instead of a parched soil bearing nothing but cactus, there is a rich black soil and a most luxuriant tropical vegetation. Large plantations of sugar cane occupy this fertile valley. Bamboo forests, the paradise of birds, lie in every direction. Bananas grow in profusion, while the cocoanut is seen here for

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<sup>1</sup> Notice of some Venezuelan Birds collected by Mrs. H. H. Smith. By Dr. J. A. Allen. Bull. Am. Mus. Nat. Hist., 1892, pp. 51-56.



the last time, as it cannot exist at any great distance from the sea. Almost completely enclosing this valley are hills and mountains, rising to a height of several thousand feet. These present a peculiar appearance as many of them are completely clothed by long grass with no traces of forest. Others are heavily wooded even to their summits. Cumanacoa being at an altitude of about 1000 feet has an agreeable climate. The nights are cool enough to make a blanket desirable while the heat is not oppressive during the day.

As might be expected, many of the birds inhabiting the coastal scrub were here absent. Many species were also found here which were not met with south of the watershed of the Caribbean and Gulf of Parian waters. This height of land lies about fifteen miles south of Cumanacoa. My stay in this locality was two weeks, from June 29 to July 12.

*San Antonio.*—Beyond the watershed to the southeast, the same distance from Cumanacoa as the latter is from Cumaná, is San Antonio. Instead of a broad, flat valley planted with cane, there is a small village nestled in a narrow valley with mountains rising precipitously on both sides. A rapid stream flows on its way to the Gulf of Paria instead of to the Caribbean Sea. The sides of the mountains are planted with coffee, the chief wealth of the region. A few miles to the west is Mt. Turumiquire, the highest peak in this group of mountains. San Antonio itself is somewhat higher than Cumanacoa, probably about 1500 feet.

The avifauna, although quite similar to that of Cumanacoa, seems to have a strong infusion of species from the south; from the Orinoco lowlands. These have followed up the Guarapiche River, but go no further north than its headwaters. As would be expected, the number of species peculiar to this southern watershed is much greater than the number found in Cumanacoa and not in San Antonio. My stay in San Antonio was twenty days, from July 14 to August 2.

*Guanaguana and Caripe.*—From San Antonio I took a trip of five days, August 3–7, to these towns, which lie to the southeast and east. The special object of this trip was to visit the famous Guacharo cave of Humboldt, where that traveller discovered the remarkable bird *Steatornis caripensis*. Thus I reached the same



point as did Goering in 1866 but by a different route. This little side trip brought out, among other things, the very local distribution of some tropical species. This was especially shown by the abundance of *Zonotrichia pileata* in the valley of Caripe. This species was wholly absent from the savannas about San Antonio, although the character of the country in the two places was identical.

*Faunal position of Margarita.*—The birds of the larger part of Margarita, which island lies directly opposite Cumaná, are similar to those of the coastal zone, as the island possesses the same characteristics as the country about Cumaná. It seems, however, that many of the forms inhabiting Margarita have differentiated, since Mr. Charles W. Richmond has described no fewer than eleven of the species brought back by Lieut. Robinson as new to science. Most of them are birds of the cactus scrub, which seem to be bleached out representatives of the species inhabiting the adjacent mainland. Since these specimens were collected during the summer, and as hitherto no summer skins have existed from the mainland for comparison, it is interesting to compare my Cumaná skins, collected at the same season, with them. Owing to the small number of specimens collected at Cumaná a satisfactory comparison cannot be made. However, through the kindness of Lieut. Robinson, I was enabled to examine many of his skins and to compare them with mine. Although Mr. P. L. Sclater<sup>1</sup> doubts the validity of the Margaritan species I believe that good series from both the island and Cumaná will show distinctive characters, although these will be less marked than was supposed. The closeness to the mainland forms would indicate a no very remote separation of the island from the continent, and that some of the species are gradually assuming distinctive characters.

If, then, a comparison of good series from both Margarita and Cumaná or Carúpano establishes the validity of these insular forms, a new district, the Margaritan, must be added to those already defined by Dr. Ernst.

*Faunal position of Trinidad.*—In working over my skins the collections made in Trinidad by Mr. Frank M. Chapman were at

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<sup>1</sup> Ibis, 1897, III, pp. 282-284.

my disposal, through the kindness of Dr. J. A. Allen, Curator of birds in the American Museum of Natural History, and I was therefore enabled to make direct comparisons of the specimens from the island with mine from the mainland. As a result I have been able to greatly reduce the number of forms hitherto supposed to be confined to Trinidad, so bringing the island and mainland into still closer faunal connection.

Mr. Chapman,<sup>1</sup> after pointing out the close geographical, geological and faunal relation of the island to South America, says (p. 7), ". . . it is therefore of special interest to note the effects of this recent insulation on the birds of the island. Unfortunately we have not as yet sufficient exact data from the adjoining main to make a satisfactory comparison, but as before stated, the relationships of the birds of the island to those of the continent are remarkably close. As far as we at present know the following species and subspecies of birds are peculiar to Trinidad or to Trinidad and Tobago:

<i>Merula xanthosceles.</i>	<i>Basileuterus vermivorus olivascens.</i>
<i>Cyclorhis flavipectus.</i>	<i>Lanio lawrencei.</i>
<i>Chlorospingus leotaudi.</i>	<i>Sporophila lineola trinitatis.</i>
<i>Platyrhynchus mystaceus insularis.</i>	<i>Rhamphocænus melanurus trinitatis.</i>
<i>Myrmeciza longipes albiventris.</i>	<i>Amazilia erythronota.</i>
<i>Momotus swainsoni.</i>	<i>Pipile pipile.</i>

"Most of these birds are simply insular representatives of mainland species to which they are closely allied."

Five of these twelve forms I found to correspond with my examples from the mainland and so they must be eliminated from the list of peculiar Trinidad species. These are:

<i>Cyclorhis flavipectus.</i>	<i>Basileuterus vermivorus olivascens.</i>
<i>Myrmeciza longipes albiventris.</i>	<i>Rhamphocænus melanurus trinitatis.</i>
	<i>Amazilia erythronota.</i>

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<sup>1</sup> On the Birds of the Island of Trinidad. Bull. Am. Mus. Nat. Hist., 1894, VI, pp. 1-86.

A sixth form, *Playtrhynchus mystaceus insularis*, was found by Lieut. Robinson at Laguayra, so there are now but six<sup>1</sup> forms left which as yet have not been found on the continent. I doubt if these will long remain peculiar to Trinidad, and I believe that as the birds of the nearby mainland become better known, those few remaining species will gradually be eliminated.

As the distinctness of the Trinidad avifauna is reduced by the occurrence of these forms on the mainland, so is the distinctness of the Eastern District of Dr. Ernst increased. This district was first recognized by the occurrence of many birds from the Guianas and Brazil which did not seem to occur further westward in Venezuela. If further study in other parts of Venezuela shows that the above mentioned subspecies are restricted to the northeastern part of the country, and to Trinidad, then there is added the evidence that, in addition to these species from the southeast, several forms attain subspecific rank in this district.

I give here a list of the birds observed; all those not marked with a \* are represented in my collection by skins. Letters following the names indicate the localities where the species was found; thus C = Cumaná; CC = Cumanacoa; S = San Antonio; G = Guanaguana; Ca = Caripe.

*Turdidæ.*

1. *Catharus aurantiirostris* (Hartlaub), S, Ca.
2. *Merula albiventris* (Spix), S.
3. *Merula gymnophthalma* (Cab.), CC, S.
4. *Mimus gilvus* (Vieill.), S, C.

*Sylviidæ.*

5. *Polioptila leucogastra* (Max.), C.

*Troglodytidæ.*

6. *Thryothorus rutilus* Vieill., CC, S.

7. *Thryophilus rufalbus cumanaensis* (Licht.), CC.

8. *Troglodytes rufulus* Cab., CC, S.

*Mniotiltidæ.*

9. *Compsothlypis pitiayumi* (Vieill.), S.

10. *Basileuterus vermivorus olivascens* Chapm., S.

*Cærebidæ.*

11. *Cæreba luteola* Cab., CC.
12. *Arbelorhina cærulea* (L.), S.
13. *Dacnis plumbea* (Lath.), C.

<sup>1</sup> Since the paper above quoted was written Mr. Chapman has described *Synallaxis carri* from Trinidad (Bull. Am. Mus. Nat. Hist., 1895, VII, p.32). This species has not been found on the mainland.

*Vireonidae.*

14. *Cyclorhis flavipectus* *Scl.*,  
CC, S.  
15. *Vireo chivi agilis* (*Licht.*),  
CC, S.  
16. *Hylophilus flavipes* *Lafr.*,  
CC, S.  
17. *Hylophilus aurantiifrons*  
*Lawr.*, C, S, G.

*Hirundinidae.*

18. *Atticora cyanoleuca* (*Vieill.*),  
Ca.  
19. *Stelgidopteryx uropygialis*  
(*Lawr.*), CC, S.

*Procnidae.*

20. *Procnias tersa occidentalis*  
(*Scl.*), S.

*Tanagridae.*

21. *Euphonia crassirostris* *Scl.*,  
CC, S, Ca.  
22. *Euphonia trinitatis* *Strickl.*,  
S.  
23. *Calliste cayana* (*L.*), S.  
24. *Calliste desmaresti* *Gray*, S.  
25. *Calliste guttata* (*Cab.*), Ca.  
26. *Tanagra cana sclateri* (*Berl.*),  
CC, S.  
27. *Tanagra cyanocephala sub-*  
*cinerea* (*Scl.*), Ca.  
28. *Ramphocelus jacapa magni-*  
*rostris* (*Lafr.*), CC, Ca, S.  
29. *Piranga haemalea* *S. & G.*, S.  
30. *Piranga ardens* (*Tsch.*), S.  
31. *Phaenicothraupis rubra*  
(*Vieill.*), CC.  
32. *Tachyphonus luctuosus*  
*Lafr.*, CC.  
33. *Tachyphonus rufus* (*Bodd.*),  
CC, S.  
34. *Saltator albicollis* *Vieill.*, S.  
35. *Saltator olivascens* *Cab.*,  
C, CC.

36. *Schistochlamys atra* (*Gm.*),  
S, Ca.

*Fringillidae.*

37. *Cardinalis phoeniceus* *Bp.*, C.  
38. *Guiraca cyanea* (*L.*), S.  
39. *Spinus cucullatus* (*Swains.*),  
S.  
40. *Spinus psaltria columbianus*  
(*Lafr.*), S.  
41. *Sporophila grisea* (*Gm.*), CC,  
S.  
42. *Sporophila gutturalis* (*Licht.*),  
CC, S.  
43. *Sporophila minuta* (*L.*), CC,  
S.  
44. *Volatinia jacarina splendens*  
(*Bp.*), CC, S.  
45. *Euetheia omissa* (*Jard.*), C.  
46. *Zonotrichia pileata* (*Bodd.*),  
Ca.  
47. *Ammodramus manimbe*  
(*Licht.*), S, Ca.  
48. *Embernagra striaticeps con-*  
*rostris* (*Bp.*), CC, S.  
49. *Emberizoides macrurus* (*Gm.*),  
S, Ca.

*Icteridae.*

50. *Ostinops decumanus* (*Pall.*),  
CC.  
51. *Cassicus persicus* (*L.*), S.  
52. *Icterus auricapillus* *Cassin*, S.  
53. *Icterus xanthornus* (*Gm.*),  
C, CC.  
54. *Icterus vulgaris* *Daud.*, G.  
55. *Sturnella magna meridionalis*  
(*Scl.*), S.  
56. \* *Quiscalus lugubris*  
(*Swains.*), C.

*Corvidae.*

57. *Xanthura caeruleocephala*  
(*Dubois*), CC, S.

*Tyrannidæ.*

58. *Sayornis cineracea* (Lafr.), S.
59. *Fluvicola pica* (Bodd.), C.
60. *Todirostrum cinereum* (L.), C, CC.
61. *Colaptes pectoratus* Cab., CC, S.
62. *Mionectes olivaceus* Lawr., Ca.
63. *Mionectes oleagineus* (Licht.), S.
64. *Leptopogon superciliaris* Cab., Ca.
65. *Capsiempis flaveola* (Licht.), CC.
66. *Ornithion pusillum* (Cab.), CC, S.
67. *Elainea gaimardi* (d'Orb.), CC.
68. *Elainea pagana* (Licht.), CC, S.
69. *Elainea albiventris* Chapm., sp. nov., CC.
70. *Legatus albicollis* (Vieill.), CC.
71. *Sublegatus glaber* Scl. & Salv., C.
72. *Myiozetetes texensis* (Giraud), CC.
73. *Myiozetetes cayennensis* (L.), S.
74. *Rhynchocyclus sulphureus* (Spix), S.
75. *Pitangus derbianus rufipennis* (Lafr.), C, CC, S.
76. *Myiodynastes audax* (Gm.), CC.
77. *Myiobius navius* (Bodd.), CC, S, G.
78. *Contopus brachytarsus* (Scl.), S.
79. *Myiarchus tuberculifer* (d'Orb. & Lafr.), S.

80. *Myiarchus tyrannulus* (Müll.), C, CC, S.
81. *Tyrannus melancholicus satrapa* (Licht.), S.
82. *Milvulus tyrannus* (L.), C, S.

*Pipridæ.*

83. *Chiroxiphia lanceolata* (Wagler), CC.

*Cotingidæ.*

84. *Tityra cayana* (L.), S.
85. *Pachyrhamphus cinereus* (Bodd.), G.
86. *Pachyrhamphus polychropterus cinereiventris* (Scl.), CC, S.

*Dendrocolaptidæ.*

87. *Synallaxis albescent* Temm., CC, S, Ca.
88. *Siptornis subcristata* Scl. & Salv., Ca.
89. *Phacellodomus inornatus* Ridgw., G.
90. *Sittasomus phelpsi* Chapm., sp. nov., Ca.
91. *Dendroornis susurrans* (Jard.), CC.
92. *Xiphorhynchus venezuelensis* Chapm., CC.

*Formicariidæ.*

93. *Thamnophilus major albicristatus* (Ridgw.), CC.
94. *Thamnophilus doliatus* (L.), C, CC, S.
95. *Thamnophilus cirrhatus* (Gm.), G.
96. *Formicivora intermedia* Cab., CC, S.
97. *Myrmeciza longipes albiventris* Chapm., CC, S.
98. *Rhamphocænus melanurus trinitatis* (Less.), CC, S.

*Trochilidæ.*

99. *Glaucis hirsutus* (Gm.), CC,  
S.  
100. *Phaethornis*            *augusti*  
(Bourc.), S.  
101. *Phaethornis*   *guyi* (Less.),  
CC.  
102. *Campylopterus*   *ensipennis*  
(Swains.), CC.  
103. *Lampornis*            *violicauda*  
(Bodd.), CC.  
104. *Thalurania refulgens* Gould,  
S.  
105. *Floricola*            *longirostris*  
(Vieill.), CC, S, G.  
106. *Doleromyia fallax* (Bourc.),  
C.  
107. *Agyrtia*            *chionipectus*  
(Gould), CC.  
108. *Amazilia*            *erythronota*  
(Less.), CC, S.  
109. *Chrysuronia ænone* (Less.),  
CC.

*Caprimulgidæ.*

110. \**Chordeiles*        *acutipennis*  
(Bodd.), C.  
111. *Nyctidromus*        *albicollis*  
(Gm.), CC.

*Steatornidæ.*

112. \**Steatornis*        *caripensis*  
Humb., Ca.

*Picidæ.*

113. *Picumnus obsoletus* Allen,  
CC.  
114. *Ceophlæus lineatus* (L.),  
CC.  
115. *Chloronerpes rubiginosus*  
(Swains.), S.  
116. *Melanerpes subelegans* (Bp.),  
C, CC.

*Galbulidæ.*

117. *Gaibula ruficauda* Cuv., CC.

*Alcedinidæ.*

118. *Ceryle americana* (Gm.), C,  
CC, S, Ca.  
119. \**Ceryle amazona* (Lath.),  
CC, S.

*Cuculidæ.*

120. *Crotophaga ani* L., CC, S.  
121. \**Diplopteryx nævius* (L.),  
S, Ca.  
122. *Piaya cayana* (L.), CC.

*Psittacidæ.*

123. *Conurus æruginosus* (L.),  
CC, S.  
124. *Pionus sordidus* (L.), S.  
125. *Psittacula*            *guianensis*  
(Swains.), C.

*Strigidæ.*

126. *Asio mexicanus* (Gm.), S.  
127. *Glaucidium phalænoides*  
(Daud.), CC.

*Cathartidæ.*

128. \**Cathartes aura* (L.), C, CC,  
S.  
129. \**Catharista atrata* (Bartr.),  
C, CC, S.

*Falconidæ.*

130. *Ictinea plumbea* (Gm.), S.  
131. *Elanoides forficatus* (L.), S,  
CC.  
132. *Asturina magnirostris* (Gm.),  
CC.  
133. *Falco sparverius* (L.), S, CC,

*Columbidæ.*

134. *Engyptila erythrorothorax*  
(Temm.), CC, S.  
135. *Scardafella squamosa*  
(Temm.), C.  
136. *Columbigallina rufipennis*  
(Bp.), CC, S.  
137. \**Columbigallina passerina*  
(L.), C, CC, S.



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| <i>Tetraonidæ.</i>                           | 141. Gallinago frenata (Licht.),<br>S.      |
| 138. Eupsychortyx sonnini<br>(Temm.), CC, S. | <i>Ardeidæ.</i>                             |
| <i>Charadriidæ.</i>                          | 142. Ardea cyanura (Vieill.), C.            |
| 139. Ægialitis collaris (Vieill.),<br>C.     | <i>Pelecanidæ.</i>                          |
| <i>Scolopacidæ.</i>                          | 143. *Pelecanus fuscus L., C.               |
| 140. Actitis macularia (L.), C,<br>CC, S.    | <i>Laridæ.</i>                              |
|  | 144. *Phæthusa magnirostris<br>(Licht.), C. |

I shall conclude with notes on some of the more interesting of the foregoing species by Mr. Frank M. Chapman, Assistant Curator of the Department of Ornithology and Mammalogy in the American Museum of Natural History, and with a few annotations. I wish to express my thanks to Mr. Chapman for his kindness in looking over the collection and in making the notes which follow.

*Catharus aurantiirostris* (Hartlaub). This very interesting bird was found at San Antonio and at Caripe but it was by no means common. It seems out of place in the tropics, where most birds are such weak singers, for it has a song which for sweetness rivals that of any of our Thrushes. It is very high and musical, and is heard only along some stream in the deepest woods of the mountain sides.

[*Thryophilus rufalbus cumanensis* (Licht.).

*Troglodytes cumanensis* LICHT. Nomencl. Av. 1854, 34.

*Thryophilus rufalbus castanotus* RIDGW. Proc. Bost. Soc. N. H., XIII, 1888, p. 386.

Four adults have slightly smaller bills than two Panama specimens, labelled by Mr. Ridgway *Thryophilus rufalbus castanotus*, but in other respects closely agree with them.

Lichenstein's type of *cumanensis* came from Cartagena and as specimens from both east and west of the type locality agree with each other it is more than probable that they would also resemble the type. I have therefore taken the name of *cumanensis* for the southern form of *Thryophilus rufalbus*.—F. M. C.]

Very common in the underbrush in the bamboo woods of the Cumanacoa valley.

*Basileuterus vermivorus olivascens* Chapm. Common in San Antonio in the underbrush, especially near water.

[Four specimens agree with a series of eight examples, including the type, from Trinidad.—F. M. C.]

*Ammodramus manimbe* (Licht.). Common in the savannas.

[Three adults agree exactly in color with specimens from Matto Grosso, Brazil, in corresponding plumage, but are considerably smaller. The average measurements, in inches, of the three Venezuelan birds and four from Matto Grosso are as follows:

	Wing.	Tail.	Tarsus.
Venezuela	2.11	1.54	.71
Matto Grosso	2.37	1.83	.71

The Venezuelan birds have, therefore, shorter wings and tail but equally long tarsi, facts which suggest that they may be more sedentary than the birds of southern Brazil.—F. M. C.]

*Icterus xanthornus* (Gm.). [An immature female, apparently in its second year, has the wings fuscous, the tail brownish yellow, the back greenish, but otherwise resembles the adult. A bird of the year is similarly colored but has only four black feathers on the throat. Neither plumage appears to have been previously described.—F. M. C.]

*Elainea pagana* (Licht.). [Five specimens in worn plumage are typical of this species.—F. M. C.]

#### [*Elainea albiventris*, sp. nov.]

*Char. Sp.*—Similar to *Elainea pagana albiceps* but with the upper parts much greener and the under parts whiter.

*Description of type* (No. 1180, Coll. W. H. P., Cumanacoa, Venezuela, July 3, 1897, W. H. Phelps). Upper parts uniform *olive-green* with a barely perceptible brownish tinge; wings fuscous, the greater and lesser coverts tipped with dingy yellowish white forming two conspicuous wing-bars; outer margin of the terminal part of the inner secondaries dingy yellowish white; tail fuscous, the feathers margined externally with brownish olive-green, the under surface of their shafts nearly pure *white*; a concealed white crown-patch; throat and breast *grayish white*; middle of the belly *white*; sides of the breast, sides, and flanks washed with greenish yellow; under wing-coverts lemon yellow; crissum pale yellow. Wing, 2.68; tail, 2.34; tarsus, .72; exposed culmen, .34; breadth of bill at anterior end of nostril, .16.

This species is represented in Mr. Phelps's collection by four adult specimens, one male and three females, which are just completing the (post-breeding) moult. It is only after careful comparison of these specimens with a large series of *Elainea p. albiceps* from southern Brazil that I have decided to add a species to an already overburdened genus. The

distinctness of these Venezuelan birds, however, is so apparent that I have no hesitation in describing them as new. They closely agree *inter se* in both size and color, and are readily distinguishable from any one of a series containing nearly fifty specimens of *Elainea p. albiceps*.—F. M. C.]

Found in Cumanacoa in large trees in the open country. Average length, in meat, 5.9 inches. Iris brown. Upper mandible brown, lower pinkish flesh, brown at tip. Legs brownish black.

*Leptopogon superciliaris* Cab. [Two specimens, extending the range of this species from Colombia to Venezuela.—F. M. C.]

*Pachyrhamphus polychropterus cinereiventris* (Scl.). [Two adult males are intermediate between *P. polychropterus niger* and *P. p. cinereiventris*, but are slightly nearer to the latter than to the former.—F. M. C.]

*Siptornis subcristata* Scl. Salv. [Mr. Phelps's collection contains a single example of a *Siptornis* which very probably should be referred to this rare species. The type of *S. subcristata* was collected by Goering at Caracas and is figured in the 'Proceedings' of the Zoological Society for 1874 (Pl. IV, fig. 1). Apparently the same bird is again figured in the Catalogue of the British Museum (Vol. XX. Pl. IV). The differences between these figures are so great that they might well represent distinct species, and while Mr. Phelps's specimen is about as far from the *P. Z. S.* figure as the latter is from the figure in the British Museum Catalogue, it seems more advisable to assume that neither figure is correct than to describe this specimen under a new name.—F. M. C.]

*Phacellodomus inornatus* Ridgw. [An adult female differs from *P. frontalis* as described by Mr. Ridgway (Proc. U. S. N. M., 1887, p. 152).—F. M. C.]

### [*Sittasomus phelpsi*, sp. nov.<sup>1</sup>

*Char. Sp.*—Differing from previously described species in its clear olive-green head and back, and in having the under parts but slightly paler than the upper parts.

*Description of type* (No. 1496, Coll. W. H. P., Caripe, Venezuela, August 7, 1897, W. H. Phelps). Head, back, wing-coverts and exposed margins of the basal half of the primaries clear olive-green with no admixture of rufous or grayish; exposed part of inner secondaries, outer margin of apical portion of primaries and remaining secondaries, rump, upper and under tail-coverts, and rectrices bright chestnut-rufous; under parts a tint lighter than the back; under wing-coverts and sub-basal portion of the inner web of the secondaries and inner primaries yellowish white. Wing, 3.10; tail, 3.06; tarsus, .70; bill from anterior margin of nostril to end of lower mandible (upper mandible broken), .40.

<sup>1</sup> Named in honor of its collector, Mr. W. H. Phelps.

This species is apparently most nearly related to *Sittasomus griseus* Jard. of Tobago. The latter is doubtless an insular form of the Venezuelan bird, from which it differs in having both upper and under parts "grayish oil-green" and the scapulars [=inner secondaries?], rump and tail "brownish orange."<sup>1</sup>

*Sittasomus olivaceus* (= *S. erithacus* Licht.), as described by Dr. Sclater,<sup>2</sup> closely agrees with the bird here distinguished as *Sittasomus phelpsi*. As pointed out by Mr. Ridgway,<sup>3</sup> however, the *Sittasomus olivaceus* of Sclater includes four distinct species, viz: *S. griseus* Jard., already mentioned, *S. amazonus* Lafr. (Borba, Barra, and Theotônio, Brazil), *S. chapadensis* Ridgw. (Matto Grosso, Brazil), and *S. sylvioides* Lafr. (Mexico). The list of specimens in the British Museum Catalogue shows that Dr. Sclater had examples of most if not all of these species, though his description applies to none of them, but to the previously unnamed bird, which I have here called *Sittasomus phelpsi*. *Sittasomus chapadensis* has the back mixed with the rufous of the rump, the wings are largely rufous externally, the under parts are tinged with yellowish, the under wing-coverts and basal wing-bands are buffy. *S. amazonus* is "much grayer" than *S. chapadensis*, and differs in other respects, while *S. sylvioides* has a "uniform brown back," leaving *S. phelpsi* as the only species in the genus having a clear olive-green back and lower parts, and, with the exception of *S. griseus*, the only one having the basal wing-band pale yellowish white instead of buffy yellow.—F. M. C.]

This species was taken in a high forested valley within a very short distance of the Guacharo cave of Humboldt. The following notes were taken in the flesh: Length, 7.25; bill, brownish-black with some gray in the middle of lower mandible; legs, olivaceous-slate.

*Thamnophilus major albicrissus* (Ridgw.). This subspecies was described by Mr. Ridgway<sup>4</sup> from a skin presumably from Trinidad. Mr. Chapman<sup>5</sup> says, concerning this form, "A male from El Pilar, Ven., and also one from British Guiana, agree with Trinidad specimens, and it is probable that all birds from north of the Amazon should stand as *Thamnophilus major albicrissus*." Two males and two females in my collection agree closely with the Trinidad specimens in the American Museum, thus confirming the above statement of the non-insularity of this subspecies.

*Thamnophilus cirrhatus* (Gm.). Mr. Ridgway<sup>4</sup> has described *Thamnophilus trinitatis* from Trinidad. Mr. Chapman<sup>5</sup> considers this a syn-

<sup>1</sup> Jardine, Ann. & Mag. N. H., XIX, 1847, p. 82.

<sup>2</sup> Cat. Birds Brit. Mus., XV, 1890, p. 119.

<sup>3</sup> Notes on the genus *Sittasomus* of Swainson. Proc. U. S. Nat. Mus., XIV, 1891, pp. 507-510.

<sup>4</sup> Description of Two Supposed New Forms of *Thamnophilus*. Proc. U. S. Nat. Mus., 1891, XIV, p. 481.

<sup>5</sup> Further Notes on Trinidad Birds, with a Description of a New Species of *Synallaxis*. Bull. Am. Mus. Nat. Hist., 1895, VII, pp. 321-326.

onym of *T. cirrhatus*, as one of his specimens agreed with skins from Guiana. Two specimens in my collection agree with the Demerara skins, but not with the examples from Trinidad, with the exception of the single one mentioned by Mr. Chapman. The degree of individual variation in this species must be worked out before the synonymy can be established.

**Amazilia erythronota** (Less.). The most abundant Hummer.

[Comparing six specimens collected by Mr. Phelps with eight specimens in the American Museum, including two authentic Trinidad examples, I can find no grounds for the continued separation of the Venezuelan and Trinidad birds.

The alleged character of difference in the color of the lower tail-coverts proves, as Mr. Salvin has remarked,<sup>1</sup> to be inconstant, this character in the Venezuelan specimens before me ranging from dusky to cinnamon-rufous. Nor is the color of the tail of value, the Trinidad examples being exactly matched by those from the mainland.

I have seen no specimens of *A. tobaci* from Tobago and therefore adopt the name *erythronota* provisionally. — F. M. C.]

**Steatornis caripensis** Humb. The famous cave, near the town of Caripe, where this species was discovered by Humboldt, was visited on August 5 and 6. The birds were found in great numbers and a thorough exploration of the large cave was made.

**Picumnus obsoletus** Allen. [Three males essentially resemble the type of *P. obsoletus* except in the color of the crown-spots, which are lemon-yellow instead of orange-red. Two young specimens of *Picumnus guttifer* have both yellow and red feathers in the crown and it seems probable therefore that Mr. Phelps's specimens are immature. In respect to the squamation of the under parts they agree with the type of *obsoletus* in being more lightly marked than *P. squamulatus* of which I have examined seven specimens, including three kindly loaned me by Mr. Charles W. Richmond, Assistant Curator of the Department of Birds in the U. S. National Museum. — F. M. C.]

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## THE HORNED LARKS OF MAINE.

BY O. W. KNIGHT.

UNTIL the present year, 1897, *Otocoris alpestris* had been the only variety of Horned Lark which had been recorded from Maine, but in view of the fact that *O. a. praticola* had been reported

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<sup>1</sup> Cat. Birds Brit. Mus., XVI, p. 225.

from the neighboring New England States it seemed highly probable that it would ultimately be taken in this State. In a letter written in the fall of 1896, my friend, Arthur H. Norton of Westbrook, predicted that the subspecies in question would soon be taken in the State. This prediction was verified by a record in the Maine 'Sportsman' for April, 1897, of the capture of four specimens at North Bridgton, Cumberland County, by J. C. Mead. Some time previously Mr. Mead had written me that he had been looking for Horned Larks in his locality for nearly twenty-five years, but so far his search had been in vain. In March he again wrote that on the 13th he had observed a flock of about twenty-five individuals running along in the road near his residence, and had secured four specimens which from the lack of yellow markings he was inclined to refer to *praticola*. These were later sent to Mr. Norton and their identification verified. When I learned these particulars, I resolved to secure the loan of specimens of the genus *Otocoris* from various collectors in the State with the hopes of discovering more specimens of *praticola* among them. Sixteen specimens were obtained from seven different sources, and eight of these proved representatives of the subspecies in question, all but one being perfectly typical. Three of these, including the least typical one, were sent to Mr. Brewster in order to be absolutely certain of their identity.

The Maine specimens of *praticola*, known to exist in collections are as follows: four taken at North Bridgton, March 13, 1897, by J. C. Mead. Two of these are males and one a female by dissection, while the fourth is a male by proportions and markings. A pair in the collection of the University of Maine were taken at Bucksport, Hancock County, in the winter of 1886 or 1887 by Alvan G. Dorr. A male taken at Bangor, Penobscot County, March 30, 1887, by Harry Merrill, and at present in his collection, is the earliest Maine specimen whose exact date of capture is known. C. H. Morrell of Pittsfield, Somerset County, has in his collection three specimens taken near his home; these are a male taken March 29, 1892, a male taken March 27, 1893, and a female taken March 22, 1894. The ovaries of this last-mentioned specimen were distended to the size of number five shot. A specimen which is seemingly a male was taken at Waterville, Kennebec



County, in the spring of 1892 or 1893 by Prof. A. L. Lane, in whose collection it now is. Another seeming male was taken near Monson, Piscataquis County, by Wallace Homer and is at present in his collection. This gives a total of twelve specimens from six localities, and is evidence enough to prove the regular occurrence of *praticola* in the State as a visitor in late winter and early spring. The chances are that a majority if not all the birds in the flock seen by Mr. Mead were of this subspecies. The nearest to the coast at which it is positively known to occur is Bucksport, situated on the Penobscot River, and consequently we may safely call these interior specimens.

I have seen only nine examples of *alpestris* from interior localities. Six were from Monson, Piscataquis County, and were sent to me by Wallace Homer. One of these was in the flesh, and as it was taken the first week in May I can cite it as a specimen taken at the latest date in the spring on which I have ever known the species to occur. A specimen in the collection of George A. Boardman of Calais, Washington County, one from A. R. Pike of Auburn, and one taken near Lewiston, Androscoggin County, by E. F. Johnson, are all the interior taken specimens which have come to my knowledge. I have personally examined all the specimens above recorded.

With the above evidence we may safely assert that *praticola* is the predominating form of the interior, in the spring at least. Whether it breeds or not I am unable to say, but at present it seems to have been taken only in the month of March. Although Horned Larks have been seen near Bangor and elsewhere in the late fall, I have been unable to learn of any fall specimens from the State being preserved in any collections, and consequently would not care to express an opinion regarding the identity of the birds that occur in fall.

As regards coast specimens of *alpestris*, Mr. Norton informs me that he has in his collection a number of Cumberland County specimens, and as he has been looking for *praticola* in vain near Westbrook, Portland, and Scarborough, the chances are that it occurs there rarely if at all. He informs me that Mr. Rackliff of Spruce Head, Knox County, has also been looking for *praticola* (at his request) but in vain so far.

I have corresponded with all the leading Ornithologists of the State, and have seen nearly all the Horned Larks which they have in their collections. My thanks are due to the parties named in this article for loaning or allowing me to view the specimens here recorded. All previous records relating to the occurrence of these birds in Maine are open to grave doubts, owing to the uncertainty as to which of the Horned Larks they refer.

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Since writing the above article, I have learned that Mr. C. D. Farrar took a specimen of *praticola* from a flock of eight or ten, near Lewiston, Feb. 26, 1897, and that it was identified by Mr. Brewster. For records of these birds, published elsewhere since my article was written, cf. Knight, 'List of the Birds of Maine,' p. 82, and Morrell, 'The Osprey,' June, 1897, p. 137.

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#### NOTES ON THE AMERICAN BARN OWL IN EASTERN PENNSYLVANIA.<sup>1</sup>

BY J. HARRIS REED.

THE breeding range of the Barn Owl (*Strix pratincola*), with few exceptions, does not extend north of Pennsylvania or New Jersey. It is locally distributed throughout its range, being restricted to such localities as afford an ample food supply for its wants. The extensive meadow lands along the Delaware River, south of Philadelphia, are its most favorite retreat, in this vicinity. Most of the trees which were scattered over these meadows and stood as old land-marks for roosting and nesting places of this bird for many years have been destroyed by storm or axe, and the Owls have been compelled to a great extent to seek quarters over the adjoining country; a few, however, still remain.

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<sup>1</sup> Read before the Delaware Valley Ornithological Club, Philadelphia, April 15, 1897.

During the summer months I have often found the young, after leaving the nest, roosting during the daytime among the dead or dense foliage of trees, probably for want of other shelter. In such cases the ground, bushes, and trunks of the trees in which they roost, are often very noticeably marked with the excrement and dried-out pellets, which lead to their discovery.

This Owl is resident the year around in this locality. During the fall and winter months I have found them roosting both singly and in colonies, depending on the size of their roosting places, and often occupying separate cavities of the same tree. An example of this may be found located in the woods at Glenolden, Delaware County, Pa., which has been a favorite roosting and nesting place for several years. This dormitory is beyond the reach of the ordinary climber, owing to its height of about sixty feet above the ground, the size and bareness of the trunk preventing many persons from investigating them and accomplishing their extermination.

On January 31, 1891, accompanied by my friend Mr. C. A. Voelker, I visited this tree and from the numerous holes in its branches counted fourteen Owls fly out during the evening. Five of these were secured, two males and three females, three being old birds and two young. Again on September 25, 1892, I paid the place a visit, but, arriving a little late in the evening, I saw only four Owls, Mr. Voelker on the following evening seeing five birds, one of which he shot. The Owls leave the roost very early in the evening, often a long time before sunset, departing singly, several minutes elapsing after the exit of one before the appearance of another, each circling around the tree several times before leaving, emitting a note similar to the clucking of a squirrel, probably a call note to their companions. This habit of leaving the roost before sunset, is more noticeable during the breeding season when the days are long and the nestlings require food, and this no doubt accounts for their being seen occasionally during cloudy days searching for food.

I think the female remains on the eggs and is often fed by the male during the season of incubation, as a certain amount of food is generally found in the nest at this time. I have never found the male covering the eggs, although if the cavity is suffi-

ciently large he is often found by her side. I have often cautiously approached their nests and peered into them before they took flight, which enabled me to distinguish the sexes as they left the nest and were shot by my companion or a gunner who chanced to be patrolling the meadows. If the eggs were heavily incubated the female was very reluctant in leaving them, but the male flushed very easily.

In the wild state their food consists chiefly of meadow mice (*Microtus pennsylvanicus*).<sup>1</sup> From the examination of several hundred pellets gathered from about their roosts, etc., I have never yet found any indications of their having eaten birds. I find that two mice is the average number contained in a pellet; and would suppose the Owls on retiring to their roosts in the morning would have a full stomach, and if two mice is the average number eaten at a meal, which takes at least three hours to digest, they would not consume very many mice with even four meals in a night. The pellets are always regurgitated before additional food is eaten, and those which I have examined from birds in the wild state indicated a complete digestion. I have, however, found as many as six mice in a pellet, but in such cases they were always collected from the nests during the breeding season, and were no doubt discarded by the female; I have found as many as thirteen fresh mice in a nest at one time, and I would suppose she would take advantage of such a supply.

In captivity they will eat anything in the fresh meat line. The following interesting facts I observed of a pet Owl belonging to Mr. Voelker, which was sent to him by a man from Haddonfield, New Jersey. From its plumage and size I should judge it was a two year old male. It was crippled in one of its legs, which had been broken above the knee joint, the bones having knit together with the foot sideways, pointing outward, which deprived it of the proper use of the foot; it therefore took kindly to Mr. Voelker's hospitality, who fed it daily on small birds and mice taken from about his premises. When these were not available, slices from

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<sup>1</sup> My friend, Mr. S. N. Rhoads, has identified the following mammals in their pellets: *Microtus pennsylvanicus*, *Microtus pinetorum*, *Peromyscus leucopus*, *Zapus hudsonius*, *Blarina brevicauda* and *Condylura cristata*.

the carcass of a Horned Owl, Curlew, Barn Owl, or any other food from about his workshop, was used.

The manner of preparing the food before swallowing it is also very interesting. The mammal or bird, as the case may be, if alive, is killed by piercing or crushing the base of the skull between the mandibles; when a bird, the longest and stiffest wing and tail feathers are plucked with its beak; if of the size of a Sparrow it is swallowed whole, always head first; if of the size of a Catbird, Thrush, or Robin, it is torn apart before devouring.

As Mr. Voelker took pleasure in assisting his pet to prepare its food in proper doses, it always relied on his judgment as to the size and shape of the morsel. I was amused during one of these operations, when he was feeding him a Catbird, just shot. He gave the helpless Owl a leg, with the thigh and adjoining portions attached, expecting him to swallow it whole; this of course with great exertion he endeavored to do, but the thigh end going down his throat, the tarsus stuck crosswise, the foot protruding from the corner of his mouth. When I insisted, Mr. Voelker relieved him by pulling it up again and breaking the bones for him. He never showed any desire to gorge himself, but often refused to notice food after having eaten a small bird. The pellets were always ejected before another meal was eaten, and could be disgorged at will, which was shown when he was offered a tempting piece of food. In doing this he would bow his head against the breast and shake it from side to side in a very dejected manner, then straightening himself up would endeavor to cast it off as if with a very repulsive feeling, as though it had a bitter taste, or was not a pleasant duty. In this manner, with widely distended mouth, it was thrown out with force enough to carry it twelve to eighteen inches from him. These pellets were often only partly digested, which may account for the unusual effort required at times. When remaining in his presence or when disturbed, he kept up a continual cry resembling that of a squab pigeon.

The tameness of this Owl may seem almost incredible; he could always be found in Mr. Voelker's company, either alongside of him or on his arm or shoulder. When engaged at his taxidermic work he would have to place a stuffed companion alongside of



the Owl to attract his attention, or he would be continually in the way. On another occasion during 1893, Mr. Voelker and myself bought three young Owls, which were shipped from Milford, Delaware, to a bird store in Philadelphia to be sold. I think they were two females and one male. The tips of their feathers still had the down clinging to them, especially on their heads and shoulders. This down is pushed out of the papillæ by the new growing feather, and in time becomes brittle and breaks off, not necessarily at the point of attachment, for the fuzzy stumps can often be seen long after the bunches of down have disappeared. The down appears to be in three distinct bunches of seven strands each, about an inch long, attached to the tips of several barbs drawn together, the middle one being exactly in the centre of the feather with one on each side of it. Nature has wisely provided in this way that the nestling should not be unclothed while in the change of moult. The youngest of these Owls was afterwards stuffed with a view of preserving it with the down, which unfortunately became brittle in time and could be blown off like the seeds from a ripe dandelion. The other two birds were liberated and remained in the woods about his house for several months, roosting among the dead foliage of broken limbs, their color resembling the leaves so closely that they were not very readily detected. From this roost I gathered a great many pellets which I examined carefully, but failed to find any differences between them and others collected elsewhere.

I have never witnessed any pugnacious qualities in their habits, but Mr. Voelker informed me that on one occasion the pet Owl attacked his daughter, who opened an umbrella suddenly in his presence; whether or not this was more from fright than anger I am unable to say, but she was always fearful of his presence afterwards. I also read in one of the Philadelphia papers some time ago of a case where a small colony had taken possession of a barn near Plainfield, New Jersey, and fiercely attacked every one who attempted to enter the building, the result of a boy molesting their young. I wrote to the farmer whose name was given, but my letter was returned unopened, and I therefore cannot vouch for the truthfulness of the statement.

During the spring of 1890, while studying the birds of Tinicum,

Delaware County, Pa., I discovered a nesting site of this Owl in a pin-oak tree, about twenty feet above the ground. The tree formed part of and fringed a small clump of maples and other swamp growth, between Long-hook Creek and the railroad, about half a mile above the main woods. The cavity was fifteen inches in diameter and two feet high, extending up to a smaller opening three feet above, which gave the Owls a chance to escape out of either hole if necessary. The entrance to the hole was quite open and the bottom of the cavity only a few inches deep. Among the decayed wood, pellets, droppings, etc., the eggs were laid and often concealed beneath this rubbish, probably to avoid the searching eye of the Crow, Blue Jay, or other intruders, while they were absent from their nest.

On the 31st of March of that year, while wandering along this clump, my attention was directed to this nest by a fence rail standing against the tree. Thinking it the work of some boys, who do not always climb trees for fun, I concluded to satisfy myself. Upon investigation I found it contained three eggs and two young birds a few days old, which, judging from the odor, had been dead some time. I cleaned the nest out and carried the eggs home and on blowing them I found they were in different stages of incubation, one almost fresh while the third was about ready to hatch. I watched this nest regularly and found it reoccupied on the 20th of April. On the 1st of May it contained two eggs; on the 4th, a young bird was hatched; on the 22d, I found the nest robbed again, but, with the birds alive I still kept up hope, and, on the 30th found two eggs. From this time on I began removing the eggs one by one as they were laid, for the nest was continually molested by boys and gunners who shot several male birds from the persistent female, who did not seem to be baffled by her misfortunes. Five of the nine eggs secured were presented to the D. V. O. C. collection of the Academy of Natural Sciences. Everything went well until June 8, when on my way to the tree I met two small boys coming from that direction with her ladyship tied up in a handkerchief and carefully tucked under one fellow's coat. After halting them and seizing their booty, I expressed my displeasure in a very feeling manner. After composing myself, the question then was, what to do with

the Owl. Fearing, if liberated, she might not return to the nest through fright, I concluded to take her home with me and keep her in captivity for a few days, with a view of studying her habits. A large box with a wired front was soon arranged and she was put into it. Here she was kept for three days, but absolutely refused food or water left her, which so preyed upon my feelings that I took compassion on her and set her at liberty. The day following her capture she laid an egg, which was carefully removed with a stick. When I approached her box she would retire to the farthest corner, open her mouth wide and emit a most piercing hissing cry as if from fright, which had a tendency to stand my hair on end. During the next two years after this experience, I occasionally visited the tree with the hopes of finding it occupied, but owing to the building of several houses in the vicinity by a land company, the poor Owls had no peace, and the tree was finally cut down.

From the experience of others with these Owls in captivity, I feel satisfied that the male birds are more easily domesticated than the females.

On two different occasions I took pleasure in escorting some of the Delaware Valley Ornithological Club members to this nest. The first time, being accompanied by Mr. Witmer Stone, the birds were absent, but the finding of three fresh mice in the nest was evidence of its being occupied. Mr. Stone robbed the poor birds of two of these for his collection. On the other occasion Messrs. W. L. Baily and G. S. Morris were escorted to Tinicum on an evening train; Mr. Baily was selected as the victim to climb the tree first to flush the Owls, as both male and female were mostly found together in this nest, the cavity being of sufficient size to accommodate both of them. The flushing of Owls in this manner is a very delicate performance, and on such occasions it is well to wear a mackintosh, as they generally leave the nest in the manner of a Green Heron; but Mr. Baily fared very well, and we clambered up after him and took our positions about the hole for investigation. Among the refuse of the nest an egg was discovered, completely hidden from view; a mouse or two were also probed out. After the Owls left the nest on this, as well as on previous occasions, they were attacked by numerous Crows.

During the summer of 1888, a pair of these Owls frequented the ice-house on the border of the lake at Ridley Park, Pa., and I was informed by a resident of the place that a brood had been reared there the previous year.

I recollect a happy experience with this Owl during April, 1883, when, accompanied by Mr. Voelker, I visited an old pin-oak tree on the lower end of Providence Island, Philadelphia County, where young are probably reared at the present day. The tree in question was within fifty feet of a farm-house, where lived an old Irishman and his family. On one side of the tree was a pig-pen, the shed of which backed up to it. During the afternoon Mr. Voelker had an interview with the mistress of the house, but failed to impress her with the importance of a scientific investigation of the Owl nest, so we concluded to purloin our fuzzy friends after dark. While Mr. Voelker was shinning the tree with my assistance from the shed over the pig-pen, the roof suddenly gave way, and the pair of us landed with a crash among the hogs, who made their escape with a terrible snort; in fact, we made our escape surprisingly quick, also. Afterwards we were always a little gun-shy of the spot, and kept reasonably distant from the locality.

Another old nesting tree, which was blown down by a wind storm August 6, 1893, stood in the southwest corner of Providence Island, between Darby Creek and the railroad. For many years it was regularly occupied, not only as a breeding place, but also for roosting purposes. I visited this tree on September 24, 1893, after hearing of its destruction, and found the decomposed carcasses of three young Owls upon the ground among pellets, etc., which had evidently been the contents of the nest when overtaken by the storm.

The tree, from its fall, had broken in half through the section containing the hole, thereby giving a much better opportunity for investigating.

The height of the hole from the ground was twenty-five feet; diameter of hole inside, two feet; outside diameter of tree at nest, three and one-half feet; the hole, three feet deep, when cleaned out. Upon digging out the solid accumulation of the nest to the extent of two feet deep, several skulls and bones of young Owls

were found, whose death no doubt resulted from starvation caused by the parent birds being shot. I gathered up sixty-eight skulls of mice, which Mr. S. N. Rhoads has identified as already noted. On August 4, 1893, a nest of these Owls was discovered in one of the chutes of the Girard Point Elevators, at the mouth of the Schuylkill River, by one of the employees, who killed the female and presented it to Dr. E. S. Harrington, of Philadelphia, who had it mounted by Mr. Voelker. This nest contained eggs. I was informed by one of the employees that they experienced great difficulty in preventing the Owls from nesting in the lofts of the elevators, and on different occasions nests with young had been found there. There is no doubt that the rats and mice which infest these elevators are their chief attraction, and I see no reason why they would not prove beneficial tenants to the owners. The glass windows in the lanterns were mysteriously broken from time to time, and it was finally attributed to the Owls. This was probably an accident on their part through a desire to reach their quarry from the outside.

Barn Owls also roost and nest among the old hollow-trunked swamp willows growing in the meadows along the Schuylkill River near its mouth.

One of the most peculiar nesting-places which I have met with was in a portable grain elevator, constructed entirely of iron. Within the hood at the top was a wheel six feet in diameter with a convex felloe two feet wide; in the felloe between the spokes they laid their eggs, among the accumulated pellets, etc. They effected an entrance into the hood through a hole above the axle of the wheel. This elevator has been out of service since the new buildings at Girard Point were built, and has been regularly used by the Owls since that time. On April 24, 1895, Mr. Mark L. C. Wilde removed two fresh eggs from this nest, and found it occupied by both birds. On April 30, three additional eggs were secured.

Another nesting place, which is occupied at the present time, is in a pin-oak tree situated in the northwestern corner of Tinicum Island, along Bow Creek. On September 28, 1895, accompanied by Mr. Wilde, I visited this nest. The cavity is twenty feet above the ground and is an irregular oval in shape, its length



being sixteen inches, width twelve inches at one end and six inches at the other. The bottom of the cavity is eight inches below the edge of the hole, and the top of the nest was entirely open, being formed in the stump of a broken-off limb. The birds were not present, but the nest contained seven eggs, four of which were fresh, one slightly incubated and two well advanced. Among the pellets, etc., were probed out thirteen fresh meadow mice.

From my experience, the number of eggs laid ranges from five to seven, and incubation lasts about three weeks for each egg. The earliest date recorded for fresh eggs is March 10, and the latest September 14.

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### THE TERNS OF MUSKEGET ISLAND, MASSACHUSETTS. PART III.

BY GEORGE H. MACKAY.

I HAD about concluded that I would not take any detailed notes this season on the Terns of Muskeget, intending simply to visit them once or twice during the summer in order to ascertain how they were breeding. In furtherance of this plan I visited the island on June 26 and 27, 1896. *Once there*, I thought I should like to know how they were laying in comparison with other years, especially 1895. I therefore asked Mr. Sandsbury to get his boat ready and we soon started for my favorite Tern resort, Gravelly Island. Our near approach was heralded as usual, and we were greeted with protests by the large assemblage of birds, considerably augmented since last season. Notwithstanding their protests we checked off every nest and egg we could discover. It was evident from the number of birds in the air, as well as the eggs discovered, that the increase from last season had been greater than in any former year. My observations last season have been further strengthened this, that *Sterna dougalli*, where the means are available, builds a better nest and conceals it more carefully than does *S. hirundo*. I saw a good many Roseate nests last year, as

also this, that had tunnel or burrow entrances to them in the high, luxuriant beach grass (*Ammophila arundinacea*); such nests are common on Gravelly Island. I also wish to observe that this year the Wilson Terns built better nests than I have ever known them to do before. I have no reason to offer for this change. The usual two or three Roseate nests were found close to the house on this island; one of these, within five feet of the house, contained two eggs, another, within three feet, contained three eggs. The chicks noted here, are only what I personally observed. I saw no dead ones on the island, and I feel fairly safe in saying, that one thousand young birds have been raised there this season. The condensed result of the nests and eggs found here is as follows.

*Gravelly Island, June 26, 1896.*

72	nests of 1 egg each,	72
239	" 2 eggs "	478
168	" 3 " "	504
2	" 4 " "	8
none	" 5 " "	none
481		1062

In addition to above were

7	nests of 2 eggs each and 1 chick
3	" 1 egg " " 1 "
	Found away from nest, 9 chicks

Leaving Gravelly Island we continued on to *South Beach*. Here we also noted more eggs than usual, nevertheless I failed to certainly identify any of them as being Arctics (*Sterna paradisæa*), though some of them looked to me as if they were such and the birds themselves were in the air overhead. The following is an account of what was observed here.

*South Beach, June 26, 1896.*

None,	nests of 1 egg each,	none
9	" 2 eggs "	18
8	" 3 " "	24
1 nest of	4 " "	4
None, nest of	5 " "	none
	Dropped eggs,	1
18		47

In addition to above were

1 nest of 1 egg each and 1 chick  
3 nests of 1 " " " 2 chicks  
1 nest of 2 eggs " " 1 chick  
Found away from nest 4 chicks

It required but a few strokes at the oars to place us on *South Point Island*, which can now no longer be designated as such, it having been joined on about three weeks ago to the south point of Muskeget Island, from which it had originally been severed by the ocean. This is one of the favorite breeding places of the Terns, and they congregate here in large numbers, all three varieties being intermingled. I was able to perceive considerable increase from the numbers which were domiciled here last season. The following gives the nests and eggs observed here.

*South Point Island, June 26, 1896.*

57 nests of	1 egg each,	57
308 "	2 eggs "	616
283 "	3 " "	849
9 "	4 " "	36
2 "	5 " "	10
<hr/>		<hr/>
659		1568

In addition to above were

8 nests of 1 egg each and 1 chick  
8 " 2 eggs " " 1 "  
Found away from nests, 23 chicks  
Dropped eggs, 5

On June 27, 1896, I started early in the morning (without Mr. Sandsbury, he being unable to accompany me) to walk over and check off the eggs on the island of Muskeget proper. When I reached the line where the nests commenced, and which had been considerably extended since last year, and surveyed the extent of territory to be traversed and examined, the difficulty of successfully accomplishing the work alone became apparent, and believing the result as thus gathered would prove unsatisfactory to myself, and unreliable for record, I abandoned it, and also for the reason that I could not possibly do it, and in addition, check off the nests

and eggs in the colony of Laughing Gulls (*Larus atricilla*), which I considered the more desirable data for present record. I, however, walked all through the breeding area on two separate lines, in order to acquaint myself with the conditions. I suppose it is safe to say that there are many more Terns here this year than last, but it would be difficult to substantiate the statement by evidence. The fact is that the birds have now reached such numbers as to render even an approximate estimate useless. Great as the aggregate may be, there is yet ample room on Muskeget Island proper alone, for several times the present number, whatever it may be, to breed.

Of the eggs viewed on the various islands this season I did not see one other than normal ones.

The first arrivals of the Terns this season was on May 4. (They commenced to arrive on the night of May 9 at Penikese Island, Massachusetts, and by the 11th were apparently all there.) A dense fog prevailed at the time when they were first heard high up in the air. The fog lifting for a short time later in the morning, disclosed about a dozen birds. On May 8 Mr. Sandsbury noted fifty Wilson Terns, the weather still continuing foggy. On the 9th it cleared and the Terns were seen in thousands over Muskeget Island proper. On April 27, 1896, Mr. Sandsbury observed four Least Terns (*Sterna antillarum*) for the first time this season; on the 30th he saw about a dozen. On May 31, 1896, Mr. Sandsbury noted seven nests with one egg each; two nests with two eggs each; and one nest with three eggs.

As this happened to be the first walk he took to look for eggs, it does not follow that they were the first of the season. On June 9, with Mrs. Sandsbury, who assisted in the search, he walked in a direct line from his house towards the north shore of the island and returned by another route not covered by the first. The following is the result noted.

25	nests of 1 egg each,	25
112	" 2 eggs "	224
205	" 3 " "	615
13	" 4 " "	52
7	" 5 " "	35
<hr/> 362		<hr/> 951

My next visit to Muskeget was on July 26 and 27, 1896. On the former date the sun was overcast but with a very clear atmosphere, so much so that I could easily distinguish the less distinct markings of the birds in the air with great accuracy. I visited Gravelly Island first, as usual, and with Mr. Sandsbury looked it well over. He informs me the first young birds he casually noticed in the air about Muskeget Island proper was on July 19.

We found scarcely any chicks here which were unable to fly, and there were large numbers of young birds in the air all around the island. We counted in all fifty-four dead chicks here.

Proceeding on, we soon landed on the *South Beach*. As I have before stated, the atmosphere was peculiarly favorable for viewing birds in the air, and I have never but once before had a similar experience here; as a result, I selected and shot nine Terns which were flying overhead with the idea of their being *S. paradisæa*, (two of them were shot on South Point, Muskeget Island); eight of them proved to be such; the other, with fully as dark underparts, had the black-tipped bill of the Wilson Tern (*S. hirundo*). I saved the other skins, but not this one. I saw other Arctic Terns, besides those taken.

All the Terns here are very gentle and tame, and show a marked contrast to the Terns of Penikese Island, Massachusetts, which are wild and shy, the result of the treatment they have been subjected to. I found but few chicks here unable to fly; all the others were in the air about us; there were quite a number, however, which could not sustain themselves in the air for any great length of time.

Crossing over to *South Point Island* we found the same conditions prevailing, the young birds were mostly in the air and we saw comparatively few chicks unable to fly. Walking over the recently formed beach, which now connects this former island with Muskeget Island proper, we reached *South Point*. I noticed here twenty-four dead chicks; in other respects the conditions were identical with those on South Point Island.

On July 27, 1896, I walked over all the breeding grounds on Muskeget Island proper, where incubation was also practically over. There were, of course, more or less eggs observed, but the percentage they bore to the original number was very small;



neither did I notice but few chicks which were unable to fly; everything in fact evidenced a most successful and prolific breeding year for the birds. As the whole month of July had been wet and cold, with a very heavy gale, accompanied with torrents of rain, commencing on the night of July 4 and continuing until the afternoon of the 5th, I feared that a diminution in the number of young birds might be expected as a result of these conditions. Contrary, however, to these expectations nothing disastrous took place. The young were flying earlier than usual, and I cannot help thinking that the mortality among the young chicks from natural causes was less than usual. It will certainly be a grand sight to see them all here next season.

During my first visit here, June 27, 1896, I observed one Short-eared Owl (*Asio accipitrinus*). This bird evidently had a mate, and together they raised a brood of four young, for during my last visit I noted six on the 27th of July. I devoted much time in trying to get near enough to shoot them. After much labor, as they were very shy, I killed one of the younger ones, which was fully grown. Together they must have destroyed a good many young Terns this season, and are likely to return next year to their breeding haunt.<sup>1</sup> It was particularly interesting to note with what perfect indifference they received the attacks of a thousand or more Terns which collected around them, whenever they appeared in the air, and even when alighted on the sand there was usually a large concourse hovering over them. I could not perceive that the Terns annoyed them in the least.

As heretofore, I desire to say a few words regarding the status of the Laughing Gulls (*Larus atricilla*) for 1896. For several days previously it had been thick, foggy weather; when it cleared, on May 9, the Laughing Gulls were heard for the first time this season. On the 17th of May Mr. Sandsbury noted that there seemed to be more of them than usual. On May 29 he wrote me that he "never saw so many." On June 27, 1896, I carefully walked all over their breeding ground, which is the same as last year, and the only one on these islands. It is located on the

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<sup>1</sup> All but one were shot before the close of the season. The one left was probably a migrant, as six in all had been killed.

northern side of Muskeget proper and has gained this year a little in length and width. In length it has now reached its westernmost limit; any future increase in area, owing to the nature of the ground, will probably be towards the eastward. Three nests, one of three eggs, and two of two eggs each were found in the marsh at the south side of Muskeget proper in July last. They were placed on top of some of the sand hillocks. I found in all thirty-two nests, containing seventy-nine eggs and one chick. There were *no concealed* or alley nests noticed this year, the birds apparently not considering such precaution necessary. They were also tamer than I have before observed them to be. One nest, located on the top of the south ridge of the valley where they were breeding, had three well-worn, distinct pathways leading to it. The nest and eggs were without any concealment. It would seem quite conclusive that these Gulls never alight *on* the nest, but a little distance away and walk to it. There are more of these Gulls here this season than last; the increase is necessarily small, as the colony is not large. If undisturbed they will continue to return and do well, but I do not think they will submit to much harassing. A list of their nests and eggs is as follows. Only one chick was noted, about two days out of the shell.

*Muskeget Island, June 27, 1896.*

4	nests	of	1	egg	each,	14
9	"	"	2	eggs	"	18
19	"	"	3	"	"	57
32						79

On July 27, 1896, I went over all this ground a second time. With the exception of half a dozen or so, all the eggs had been hatched, as was evidenced by the many broken shells lying about. I found but one chick in the grass, although I searched very carefully, and I am puzzled to know where they hide themselves, as I did not see a single *young* bird in the air, nor did I July 30 last year. The old birds were sitting all about, and concentrated on their breeding area, often in groups. I did not note a single dead chick; I have in fact *never* seen a dead one. I, therefore, think, taking everything into consideration, that these Gulls have

also had, like the Terns, a most favorable and successful breeding season.

In late advices from Mr. Sandsbury (October 2) he informs me that on this date the Terns had diminished about one half, and that almost every day large flocks could be seen going high up in the air and after circling coming down again, these actions being preparatory to setting out on their southern migration. This shows that the birds are remaining later than usual this season.

In advices from Penikese Island, Massachusetts, I learn that there were but few Terns remaining after September 1, and by the 17th, they had all departed.

The little beach mouse (*Microtus breweri*) has again become very abundant on Muskeget Island proper. The remnant which was preserved on South Point Island, some years ago, can now pass uninterruptedly over the newly formed beach which connects the two. On July 27, 1896, I took an adult male which was in the process of shedding its coat.

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## CRITICAL NOTES ON THE GENUS *AURIPARUS*.

BY HARRY C. OBERHOLSER.

PROFESSOR BAIRD, with his usual astuteness, was apparently the first to notice the considerable difference existing between the Verdins of Texas and those of Lower California.<sup>1</sup> He mentioned their contrasting points but did not regard these characters as of distinctive value. Mr. Walter E. Bryant,<sup>2</sup> in his remarks upon the genus, subspecifically separated the western form and bestowed upon it the name *Auriparus flaviceps ornatus*. Mr. Bryant was possibly not correct in supposing that the type of Sundevall's

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<sup>1</sup> Review of American Birds, I, Aug., 1864, 85.

<sup>2</sup> Zoe, I, 1890, 149.

*Ægithalus flaviceps* came from Mexico,<sup>1</sup> although quite right in considering that Lawrence's *Conirostrum ornatum* from Texas is the same form.<sup>2</sup> Since *Conirostrum ornatum* is thus made a synonym of *Ægithalus flaviceps*, or as it is now known, *Auriparus flaviceps*, the term *ornatus*, if employed in the genus *Auriparus*, becomes manifestly untenable. Consequently if there be no other name available, and assuming, of course, the validity of this form, the *Auriparus flaviceps ornatum* of Bryant will require to be rechristened. And this seems to be the necessity, for apparently the only remaining synonym is *Parus flavifrons* of Gray,<sup>3</sup> which, though attributed by him to Sundevall, is quite evidently a mis-citation of the latter's *Ægithalus flaviceps*, and is consequently an undoubted *nomen nudum*. Furthermore, it is probably applicable entirely to the eastern race, as 'Rio Grande' is the only locality assigned.

The subspecies inhabiting Lower California may therefore be called

***Auriparus flaviceps lamprocephalus*, nobis.**

CHARS. SUBSP. — *A. flavicepsi affinis, sed cauda multo brevior, necnon alis brevioribus; capite flavo paululum clariore.*

Al., 48-52 (50.1) mm.; caud., 41-43.5 (42.2) mm.; culm. exp., 8.5-9.5 (9.) mm.; tars., 14-15 (14.7) mm.

*Habitat.* — California inferior australis.

*Description.* — *Type*, male adult, No. 117551, U. S. Nat. Mus.; Cape St. Lucas, Lower California, April 7, 1889; C. H. Townsend. Upper parts, excepting head, dull smoke gray, washed with olive yellowish, most conspicuously so on the rump. Wings and tail fuscous, the wing-coverts, tertials, and narrow edgings to quills and rectrices paler than the rest; bend of wing rich burnt sienna. Head all around deep gamboge yellow, shaded on occiput and sides of head with olivaceous, the crown and throat being almost immaculate. Remainder of lower parts dull white, with a slight wash of yellow, this most evident on the breast and anal region.

*Young, sex unknown*, No. 16962, U. S. Nat. Mus.; Cape St. Lucas, Lower California; J. Xantus. Above pale grayish brown, the rump strongly

<sup>1</sup> In the original description, verified for me by Mr. Witmer Stone, Sundevall states that his type came from 'Sitka or California.' (Öfversigt Vet. Ak. Förh., VII, 1850, 129, note.) Its measurements refer it to the more eastern race.

<sup>2</sup> Ann. N. Y. Lyc. Nat. Hist., 1851, 113.

<sup>3</sup> Hand-List Birds Brit. Mus., I, 1869, 234.

tinged with tawny olive, the head washed with olive yellow; a few wholly yellow feathers on the crown. Wings and tail light brown, of a shade approaching broccoli brown, the feathers nearly all narrowly margined with paler; bend of wing burnt sienna. Sides of head like the back, but mixed with many feathers of the new plumage; lower parts soiled white, slightly suffused with dull yellow on the breast, and with a few bright yellow feathers visible on the chin and throat.

This form is distinguished from true *flaviceps* by its very much shorter tail, somewhat shorter wing, and by the brighter tint of the yellow of the head, particularly that on the forehead and anterior portion of the crown. This clearness of the yellow of the head, though not entirely constant, is apparently an excellent average character.

In two of the five adult males examined there is a noticeable rufous patch on the forepart of the crown, and in one of these two birds it is quite well defined. In the three other specimens, including the type, the bases of the feathers on this part of the crown show more or less of rufous, which, however, does not appear unless the plumage be disturbed. The type and one of the others are quite strongly tinged with yellow on the body, both above and below; while in the remaining three this color is, except on the rump, barely evident posterior to the head and throat. The general tone of the plumage above, exclusive of the head, is very uniform in three of the specimens; somewhat darker in one of the others, and slightly browner in the remaining example. A young bird in the U. S. National Museum collection, supposed to be from Santa Margarita Island, Lower California, is darker above than the specimen here described, but is not otherwise importantly dissimilar. As this bird was skinned from alcohol its different color may be due to the chemical action of the preservative.

Mr. Bryant included southern Arizona and southern California in the range of his western race (*loc. cit.*), but with the series of Arizona and Texas specimens now available (some 65 in all) it seems impossible satisfactorily to separate the birds from these localities. It is true that the birds from Texas are slightly larger, and, even in very young plumage, appear to average rather darker than those from Arizona, but the difference is very slight and inconstant.



While most of the Arizona breeding birds, with some of the winter ones, are a little paler than Texas examples, many of the winter specimens from the former locality are fully as dark as Texas birds of the same season. Unfortunately there is not at hand a series of California specimens, but two birds from Fort Yuma, and one from the Colorado Desert, San Diego County, California, are not appreciably different, either in size or color, from specimens taken in southeastern Arizona. So far as *lamprocephalus* is concerned, the color of the upper parts exclusive of the head is about as dark as that of Texas birds of the corresponding season. No specimens from the upper half of Lower California have been examined, by reason of which it is impossible at present to determine how far to the northward the range of the Cape form should be extended.

True *Auriparus flaviceps*, whose range may be considered to extend from Texas to California, exhibits very much individual as well as seasonal variation. In the general color of the upper parts there exists usually much difference, even in specimens of the same season from a particular locality, so that this character becomes valueless as a basis of comparison. Summer birds are, on the whole, paler than those of any other season, but there occur some winter specimens which are fully as light in color as are those taken in the breeding season. The upper parts range in color from dull smoke gray to hair brown; and the under surface from grayish white to creamy or brownish white, in some specimens the median portions being tinged with the yellow of the head. Taking into consideration only the adult males, as has been here done in the diagnosis, it is found that considerable difference exists in the shade and extent of the yellow of the head and throat. In most cases there is little or no indication of a rufous frontal patch, though it usually is present to a greater or less degree, but visible only on disturbing the feathers. In some specimens, however, it is very strongly marked.

The writer desires to make acknowledgment to Mr. Robert Ridgway for the privilege of examining material in the National Museum; and to Mr. Frank M. Chapman for the use of specimens belonging to the American Museum of Natural History.

MEASUREMENTS OF SPECIMENS OF *Auriparus flaviceps lamprocephalus*.

U. S. N. M. No.	Sex.	Locality.	Wing.	Tail.	Exposed Culmen.	Tarsus.	Middle Toe with Claw.
12968	♂	Cape St. Lucas, L. Calif.	48	41	9	15	13
12967	♂	" " "	49	42	8.5	14.5	12
117551	♂	" " "	52	43.5	9.5	15	12
117552	♂	" " "	51.5	43	9	15	12
117580	♂	Conception Bay, "	50	41.5	9	14	12
Average . . . . .			50.1	42.2	9	14.7	12.2

MEASUREMENTS OF *Auriparus flaviceps* FROM TEXAS.

Average of five males . . . . .	54.4	49.5	8.8	15.5	12.4
Maximum . . . . .	55	51	9	16	13
Minimum . . . . .	54	47.5	8.5	15	12

MEASUREMENTS OF *Auriparus flaviceps* FROM ARIZONA.

Average of ten males . . . . .	52.9	48.2	8.1	15.3	12.2
Maximum . . . . .	54.5	50	8.5	16	12.5
Minimum . . . . .	51.5	47	7.5	15	12

## DIRECTIVE COLORATION OF BIRDS.

BY ERNEST SETON THOMPSON.

*Plate IV.*

THE Protective Coloration of Birds has been much studied of late, but I do not know of any paper treating of their Directive Coloration.

While living on the Plains in the eighties, I made many studies, or as I then called them 'flying descriptions' of birds, and on putting these together recently in a methodic scheme I arrived at a few general principles that may prove of interest.

I can best illustrate by taking an example from mammals. The common jack rabbit when squatting under a sage-bush is simply a sage-gray lump without distinctive color or form. Its color in particular is wholly protective, and it is usually accident rather than sharpness of vision which betrays the creature as it squats. But the moment it springs, it is wholly changed. It is difficult to realize that this is the same animal. It bounds away with erect ears, showing the black and white markings on their back and under side. The black nape is exposed, the tail is carried straight down, exposing its black upper part surrounded by a region of snowy white; its legs and belly show clear white, and everything that sees it is plainly notified that *this is a jack rabbit*. The coyote, the fox, the wolf, the badger, etc., realize that it is useless to follow; the cottontail, the jumping rat, the fawn, the prairie dog, etc., that it is needless to flee; the young jack rabbit, that this is its near relative, and the next jack rabbit that this may be its mate. And thus, though incidentally useful to other species at times, the sum total of all this clear labelling is vastly serviceable to the jack rabbit and saves it much pains to escape from real or imaginary dangers.

As soon as it squats again all the directive marks disappear and the protective gray alone is seen.

In the bird world the same general rule applies. When *sitting*, birds are *protectively* colored; when *flying*, *directively*.

The general rule may be topographically rendered: Color of upper parts, Protective; color of lower parts, Directive. In the drawings, I have shown only certain birds of prey. All of these present a distinctive pattern when viewed from below as they fly. It is inconceivable that this pattern should have a protective object, so if it have a purpose at all it must be a directive one.

An evidence of this is seen in the fact that all birds with ample wings and habits of displaying them bear on them distinctive markings—*e. g.*, Hawks, Owls, Plovers, Gulls, etc. Every field man will recall the pretty way in which most of the Plovers identify themselves. As soon as they alight, they stand for a moment with both wings raised straight up to display the beautiful axillar pattern; a pattern distinctively different in each kind. And no doubt their end is served by telling friend or foe alike that this is such and such a species.

On the other hand birds whose wings in flight move too rapidly for observation are without markings on the underside.

Referring to the plate (Plate IV), several interesting conclusions may be drawn.

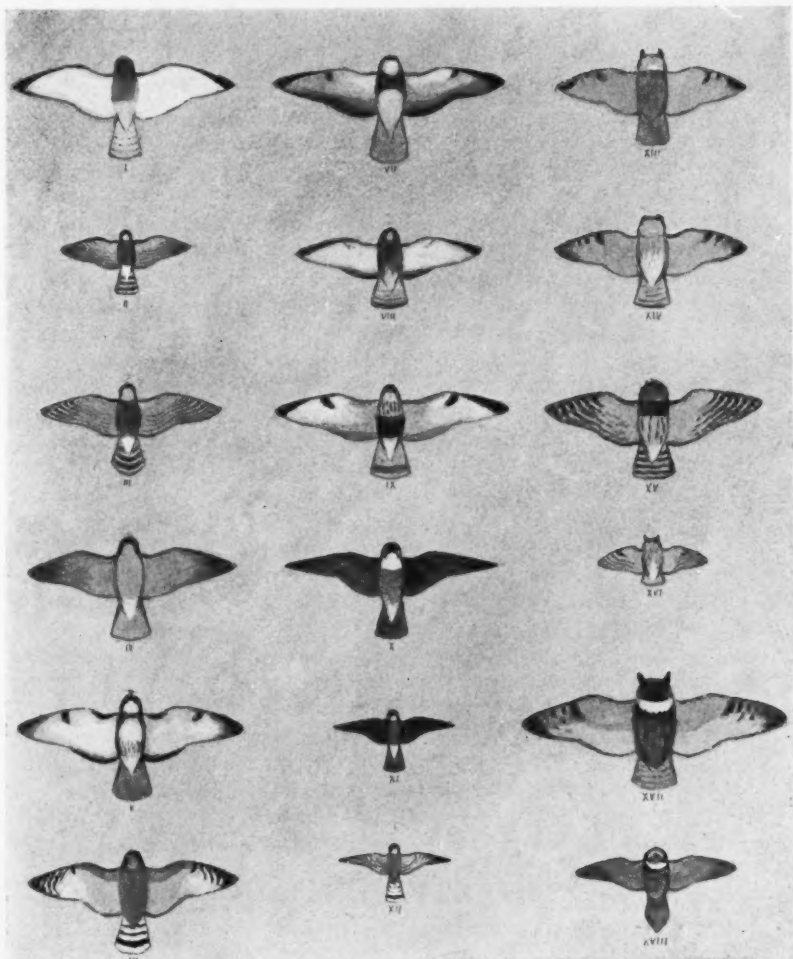
Though it is proverbially dangerous to classify animals with a view to one set of characters only, it is nevertheless interesting and often instructive. Among the Hawks the presence of the wrist spot characterizes the *Buteo* group including the Eagles and the Osprey.

The Falcons on the other hand, in common with the *Accipitres* and *Circus*, are without the wrist spots and have nebular banded primaries.

Exceptions to the rule that directive marks belong to the lower surface are seen in the Redtail, whose rufous tail is its most distinctive mark; in the white rump-spot of the Marsh Hawk and the head-markings of Goshawk, Peregrines and Sparrow Hawks.

Among the Owls the wrist spot seems to characterize those that have 'ear tufts.'

In this brief paper and single plate I have limited myself to our northern birds of prey, but enough material has been gathered to justify a much more extended application of the generalizations indicated.



- I. Marsh Hawk.
- II. Sharp-shinned Hawk.
- III. Cooper's Hawk.
- IV. Goshawk.
- V. Red-tailed Hawk.
- VI. Red-shouldered Hawk.

- VII. Swainson's Hawk.
- VIII. Broad-winged Hawk.
- IX. Rough-legged Hawk.
- X. Duck Hawk.
- XI. Pigeon Hawk.
- XII. Sparrow Hawk.

- XIII. Long-eared Owl.
- XIV. Short-eared Owl.
- XV. Barred Owl.
- XVI. Screech Owl.
- XVII. Horned Owl.
- XVIII. Hawk Owl.





NEW RACE OF *SPINUS TRISTIS* FROM THE  
PACIFIC COAST.

BY JOSEPH GRINNELL.

*Spinus tristis salicamans*, new subspecies. WILLOW  
GOLDFINCH.

*Winter Plumage*:—Similar to corresponding plumage of eastern *S. tristis*, but browner with much broader wing-markings. In these respects it thus resembles *S. t. pallidus*, but is easily distinguishable by its extreme darkness.

*Type*, ♂ ad., No. 575, Coll. J. G., Pasadena, California, Dec. 21, 1895. Above dark olive-tawny; rump lighter; sides and flanks shaded with color of back; under tail-coverts white, tinged with tawny; throat gamboge yellow shading into dull green on middle of breast; abdomen pure white; sides of head like throat, excepting the ear-coverts which are of the color of the back. Wings and tail black; white skirtings of the tail-feathers scarcely exceeding those of *S. tristis*, but the markings on the wings much extended. Greater wing-coverts broadly tipped with white, forming a bar across the closed wing .18 of an inch wide; median coverts also broadly white tipped; lesser coverts olive-green; primaries narrowly tipped, and secondaries and tertiaries broadly tipped and outwardly margined with white. The white markings of the wings more or less tinged with tawny. Bill chrome yellow at base, dusky-tipped.

The female in winter plumage is similar to the male, but the black of the wings and tail is less pure, and the throat is duller colored; bill dusky.

*Summer Plumage*:—In this plumage the male is scarcely distinguishable from *S. tristis*; the black cap is, if anything, not so extended, and the yellow is not so pure and intense as in the eastern form. The white edgings of the wing-feathers are often entirely worn off, so that the wing is left with barely a trace of white. Bill, in life, darker, almost orange-ochraceous. The wing and tail average shorter, and the bill bulkier.

The female in breeding plumage is readily separable from the eastern bird by its much darker color. The female *S. tristis* is brightly tinged over the whole breast with yellowish green, while the female *S. t.*

	Wing.	Tail.	Culmen.	Gonyx.	Bill from Nostril.	Depth of Bill.
<sup>1</sup> Average of 15 ad. ♂♂ of <i>Spinus tristis salicamans</i> from Pasadena, Cal.	2.76	1.97	.39	.32	.33	.27
Average of 15 ad. ♂♂ of <i>Spinus tristis</i> from Washington, D. C.	2.87	2.05	.36	.30	.31	.25

<sup>1</sup> Measurements are in inches.

*salicamans* is dull greenish yellow on the throat, becoming still duskier anteriorly. Even juveniles of the Willow Goldfinch just from the nest are deeper and darker colored than those of *S. tristis* proper.

*Habitat.*—Pacific Coast, from Washington to Southern California.

This geographical race seems as well pronounced as many others of the dark Pacific Coast forms. As might be expected, specimens from Oregon and Washington in winter plumage are slightly darker and browner than Southern California birds; but as the Willow Goldfinches are of a wandering disposition, and at least slightly migratory in the northern part of their habitat, this variation is not great.

The habitat of *salicamans* seems to be perfectly divided southerly from that of *pallidus* of the Great Basin. The Colorado Desert and the high Sierras form a broad territory from which I have seen no records, and which cannot be regularly crossed. The only specimens of an intermediate character are from the northern part of the Great Basin, where they seem to combine in part the characters of *tristis*, *pallidus* and *salicamans*, and are hardly referable to either. Several specimens of the latter from California show a considerable extension of the white on the inner webs of the tail-feathers, but so do occasional eastern birds.

I have examined 175 Goldfinches from nearly every State; the winter birds vary greatly in respect to the tone of coloration, but as this species is more or less migratory throughout its range, it is hard to draw any lines. Specimens from Texas (Fort Clark, Coll. E. A. Mearns) in particular, are light colored and grayer than any others, though showing no pronounced tendency toward *pallidus*.

If I judge rightly from specimens at hand, the spring moult of the Eastern Goldfinch takes place during two or three weeks in April. In Southern California, however, the spring moult in many individuals of *S. t. salicamans* begins in January and extends far into May. Thus a series of specimens taken from January to May, presents every gradation of plumage from winter to full summer, but none entirely in one or the other. They frequently breed early, before the spring moult is completed. I have adult males, taken with sets of eggs in April, that possess but a few of the bright yellow feathers, and the black crown is but imperfectly indicated. In certain tracts of feathers, I have

reason to believe there is a marked color change without moult or abrasion. The wing- and tail-feathers are moulted but once a year, in August and September.

The Willow Goldfinch is a characteristic inhabitant of the willow copses which border the marshes and sluggish streams of the lowlands. In summer, in Southern California, it is confined almost exclusively to these localities. But in fall and winter it gathers in small flocks and haunts the sunflower patches on the mesas, and even the mountain cañons, feeding on the buds and seeds of the sycamores and alders.

I am indebted to Mr. Robert Ridgway of the National Museum for suggestions in regard to this paper, and to the authorities of the National Museum for the loan of a series of *S. tristis* for comparison.

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### THE SITKAN KINGLET.

BY WILLIAM PALMER.

THREE adult summer Ruby-crowned Kinglets, collected by Mr. Joseph Grinnell near Sitka, Alaska, and two others, a spring male and an immature, collected at the same place by Fred. Bischoff, differ so much from many specimens of *Regulus calendula* with which I have compared them as to be worthy of separation by name.

#### *Regulus calendula grinnelli*, subs. nov. SITKAN KINGLET.

*Differential Characters.*—Above sooty dark olive (similar to *R. obscurus*) darkening to blackish along sides of vermilion crown patch. Beneath, throat and breast dusky gray; abdomen whitish tinged with yellowish. Bill slenderer at tip and broader at base than in *calendula* and laterally indented in the center. Wings with dark parts nearly black. Size between *R. calendula* and *R. obscurus*. Type, adult ♂, No. 160931, U. S. Nat. Mus. Collection (No. 1161, J. G. Coll.). Collected by Joseph Grinnell, June 23, 1896, Sitka, Alaska.

Immature [♂].—Above rich brownish olive, much darker than in *calendula* of same age. Beneath brighter than in same. Size smaller with longer and more slender bill. Wings darker with narrower and yellower bars. No. 45928, U. S. Nat. Mus. Coll., Sitka, 1866; Fred. Bischoff.

The Sitkan Kinglet is a smaller and darker bird than its near relative *R. calendula*, approaching closer, except in the coloring of its crown patch, to *R. obscurus* of Guadalupe Island. It lacks the grayness and paleness above and on the sides of the head and neck characteristic of *calendula*. The bill is larger and differently shaped. The wing is much darker, nearly black in places, and the anterior bar especially is narrower. The female bird I have not seen.

It is probable that *grinnelli* will prove to be a resident or a slightly migratory coast bird about Sitka and eastward and southward, as indicated by its shorter wings. More northern Alaskan examples are *calendula*. Two winter specimens, out of a large number examined from California, are differently intermediate; one being nearly similar in coloration to *grinnelli*, and both having similar bills, but with longer wings and tails. The character of the climate about Sitka is shown by the following extract from a 'circular' dated July 29, 1897, and compiled by the Chief of the Weather Bureau of the U. S. Department of Agriculture. "The fringe of islands that separates the mainland from the Pacific Ocean from Dixon Sound northward, and also a strip of the mainland for possibly 20 miles back from the sea, following the sweep of the coast as it curves to the northwestward to the western extremity of Alaska, form a distinct climatic division which may be termed temperate Alaska. The temperature rarely falls to zero; winter does not set in until about December 1, and by the last of May the snow has disappeared except on the mountains. The mean winter temperature of Sitka is 32.50, but little less than that of Washington, D. C. . . . The rainfall of temperate Alaska is notorious the world over not only as regards the quantity that falls, but also as to the manner of its falling, viz.: In long and incessant rains and drizzles. Cloud and fog naturally abound, there being on an average but 66 clear days in the year." Under such conditions *grinnelli* has been differentiated from its relative *calendula*. The type locality of this last is 'Pensylvania.'

My thanks are due Mr. Ridgway for the opportunity of examining the specimens in his care, and to Mr. Grinnell, for whom the form is named, for kindly presenting the type, together with many other specimens of birds, to the National Collection.



## MEASUREMENTS OF REGULUS CALENDULA GRINNELL.

No.	Age.	Sex.	Date.	Locality.	Collector.	Wing.	Tail.	Culmen.	Tarsus.	Remarks.
45929	ad.	♂	May — 1866.	Sitka, Alaska.	Fred. Bischoff.	2.20	1.72	.14	.76	Yearling?
1108	"	♂	June 10, 1896.	" "	Joseph Grinnell.	2.20	1.71	.15	.80	Type.
1161	"	♂	" 23, "	" "	" "	2.22	1.72	.15	.80	
1230	"	♂	July 2, "	" "	" "	2.22	1.70	.15	.78	
45928	im.	♂	Sept. — 1866.	" "	Fred. Bischoff.	2.05	1.66	.13	.70	

## MEASUREMENTS OF REGULUS CALENDULA.

58408	ad.	♂	May 9, 1869.	Fort Kenay, Alaska.	Fred. Bischoff.	2.35	1.78	.15	.80	
54391	"	♂	" 16, 1868.	Nulato, Alaska.	W. H. Dall.	2.30	1.78	.15	.75	
54392	"	♂	" 15, "	" "	" "	2.30	1.77	.15	.78	
19482	"	♂	" 17, 1860.	Ft. Resolution.	B. Kennicott.	2.31	1.81	.15	.80	
89277	"	♂	[July] 1881.	Moose Factory, H. B. Terr.	Walton Hayden.	2.31	1.76	.15	.73	
89276	"	♂	" "	" "	" "	2.33	1.81	.14	.80	
66706	"	♂	May 30, 1873.	Garland, Col.	H. W. Henshaw.	2.40	1.85	.15	.83	
110643	"	♂	" 7, 1886.	10,000 ft., "	Denis Gale.	2.42	1.90	.16	.80	
90088	"	♂	" 12, 1881.	Carberry, Manitoba.	E. E. Seton.	2.35	1.76	.14	.80	
119959	"	♂	Apr. 28, 1890.	Laurel, Md.	R. Ridgway.	2.26	1.73	.14	.82	
124194	"	♂	" 15, 1888.	Washington, D. C.	C. W. Richmond.	2.40	1.78	.15	.81	
124196	"	♂	" "	" "	" "	2.35	1.70	.15	.79	
1150	"	♂	" 17, 1883.	Arlington, Va.	W. Palmer.	2.35	1.80	.14	.76	
1565	"	♂	May 1, 1887.	" "	" "	2.30	1.80	.13	.80	
2703	"	♂	Apr. 12, 1891.	" "	" "	2.30	1.80	.14	.80	

## INTERMEDIATES.

160932	ad.	♂	Jan. 10, 1891.	Los Angeles, Cal.	Wm. Berman.	2.38	1.80	.14	.77	Dark.
160933	ad.	♂	" " "	" "	" "	2.40	1.80	.14	.71	Paler.

## GENERAL NOTES.

**Early Notice of *Gavia adamsi*.**—The 'Narrative' of Captain (later Sir) John Franklin's first Expedition contains, at p. 222 of the Philadelphia edition, 1824, under date of Sept. 26, 1820, while he was at Fort Enterprise, the following easily recognized description: "The last of the waterfowl that quitted us was a species of diver, of the same size with the *Colymbus arcticus*, but differing from it in the arrangement of the white spots on its plumage, and in having a yellowish white bill. This bird was occasionally caught in our fishing nets."—ELLIOTT COUES, *Washington, D. C.*

**The Least Tern Breeding on Martha's Vineyard Island, Massachusetts.**—On July 21-22, 1897, while on a walking trip along the south beach of Martha's Vineyard Island, Mass., I found a few pairs of Least Tern (*Sterna antillarum*) undoubtedly breeding near Job's Neck Pond, and a small colony of about fifty birds breeding near Black Point and Chilmark Ponds. An egg was found, but as Piping Plovers (*Ægialitis meloda*) were also on the beach the identification is not positive. A fair number, however, of young birds were in the air.—REGINALD HEBER HOWE, JR., *Longwood, Mass.*

**The Terns of Penikese — A Correction.**—In my article on the 'Terns of Penikese Island, Massachusetts' (Auk, Vol. XIV, July, 1897, p. 283), at foot of the account of nests and eggs, for 40 nests on Gull Island, read 41 in both places. In *totals of eggs*, read 3099 instead of 2055 for Penikese, and 90 instead of 88 for Gull Island.—GEORGE H. MACKAY, *Nantucket, Mass.*

**Capture of the Little Blue Heron in Connecticut.**—A local gunner reported the capture of a strange Heron on August 4. Unfortunately it was sent off to be mounted before I could sex or even see it. The bird has just been shown me, however, mounted, and proves to be an adult *Ardea cærulea* (sex, as I said before, unknown). The man who secured the specimen said that he found it in a small fresh-water 'pond hole' near this place. It was in company with another of the same species, and owing to their extreme shyness it was nearly a week before he could succeed in getting this one. The individual secured is in perfect plumage.—P. J. MCCOOK, *Niantic, Ct.*

***Ægialitis nivosus* in Florida.**—Between the 23d of February, this year, and the 2d of April I collected nineteen specimens of typical *Ægialitis nivosus*. The first seven were collected Feb. 23, at the western end of Santa Rosa Island, near Fort Pickens. Between the 18th and the 24th of March a dozen specimens were taken on the Gulf beach of Santa Rosa Island, opposite Mary Esther P. O. In these specimens the females all

showed signs of breeding. Fully developed broken eggs were taken from two of the birds. Two specimens were taken at East Pass on Apr. 2. Many more birds might have been secured. The Snowy Plover was the most common of the shore birds at the localities named.—Geo. K. CHERRIE, *Field Museum, Chicago, Ill.*

**Buteo albicaudatus in Arizona.**—While driving across the desert between Florence and Red Rock, Arizona, a large nest upon which a Hawk was sitting was noticed close by the road. The nest was built in a mesquite tree and but ten feet from the ground.

The bird remained on the nest until I approached within easy gun shot. From the gray appearance of its head I at once took it for *Buteo swainsoni* and refrained from shooting it. A wave of the hand started the bird, which left the nest from the opposite side. As soon as the bird came in full view I realized my error, and hastily fired a shot after it; as the load was a light one, the bird flew away minus but a few feathers. I have seen in life and in their native wilds twenty-six species of our Hawk family, twenty of which I have taken, but this was a new one to me—a Hawk which I had never seen before.

Its white tail, including the rump, with broad terminal band of black, chestnut shoulders, gray head, and light colored breast with a few dark markings, and its size, which equals that of *Buteo borealis*, puts to rest all doubt but that the bird was *Buteo albicaudatus*.

Being so far from its ascribed range, I have looked up all of the available history bearing upon this species, and so far as I can learn no specimens have been taken in the United States outside of a small portion of the southern corner of Texas.

After leaving the nest the Hawk flew to the dead top of a mesquite, a quarter of a mile away. I started after it at once, hoping that I might yet secure the parent of the egg which I had just taken. I had crossed probably one fourth of the intervening distance, when the bird arose with powerful strokes of its wings, circling upward until but a speck in the sky. I could not tarry long in hope of securing the bird, and with much reluctance the journey was resumed. The distance between Florence and Red Rock is almost forty miles, between which places no water fit for man or beast is to be found.

The egg taken was far advanced in incubation. In size, shape and color it resembles one of the lighter unmarked eggs of *Buteo borealis*. —GEORGE F. BRENINGER, *Phoenix, Arizona.*

**Additional Records of the Flammulated Owl (*Megascops flammeola*) in Colorado.**—On the 27th of May, 1897, I secured a set of two fresh eggs, and on the 29th a set of three eggs slightly incubated, of the Flammulated Screech Owl, and in both cases secured the female bird. The first set was secured in an old Woodpecker's hole in an old pine stub, about eighteen feet from the ground, at an altitude of about 7200 feet,

and the other in a dead quaking ash about twenty feet from the ground and at an altitude of about 7800 feet.

In neither case was there any nest built, the eggs being deposited on the litter at the bottom of the hole. Diligent search did not secure the male birds.

These nests were in the foothills about thirty miles nearly west southwest from Pueblo, Colorado. — D. P. INGRAHAM, *Beulah, Colorado*.

**Nesting of the Short-eared Owl in Southern California.**— On March 27, 1896, Mr. H. L. Rivers and the writer found a nest of this bird (*Asio accipitrinus*) containing six eggs, the incubation varying from very slight to well advanced. The location was near low meadow ground about five miles from the coast in this County, but the nest was about twenty-six feet up in the top of a thick-foliaged oak, among some sycamores bordering a dry stream bed. Another unoccupied nest was placed two or three feet higher in the opposite side of the same tree. Both nests were composed of sticks, lined with oak leaves and a few feathers, the depression in each being very slight.

When within a few feet of the occupied nest the bird flew off and being joined by its mate, the pair held a 'pow wow' in the grass, uttering squeals like a rat. While the nest was being examined one bird perched almost at arm's length in the foliage of the tree.

Two weeks later, when I revisited the locality, neither bird was seen, but the nest, which had previously been empty, contained a dried up egg without a shell.

Of this bird Captain Bendire said "it is not improbable that it may sometimes breed in California and Nevada."— M. L. WICKS, JR., *Los Angeles, Cal.*

**Partnership Nesting of Valley Partridge and Long-tailed Chat.**— The nest was discovered by a little girl, and was composed of grass and straws placed in a small depression of the ground above which it projected slightly; over all was a dead eucalyptus limb to which the dry leaves still clung. The locality was this County, within five feet of a road which had been quite frequently traveled up to a week before, at which time the road had been changed. Not thirty feet from the spot a cluster of wild blackberry vines had been burnt down a few months previous; in them a Chat (*Icteria virens longicauda*), probably the same one, had nested for years.

The Partridge (*Callipepla californica vallicola*) was flushed from the nest when first discovered; it had been covering two of its own and three Chat eggs, the Chat itself not being seen. On a second visit that afternoon the Chat flew off; the Partridge was not visible. The next day at noon a third trip was made; the Chat was on the nest, the female Partridge being in the vicinity. The number of Chat eggs had been increased to four; the Partridge eggs were still two in number.— M. L. WICKS, JR., *Los Angeles, Cal.*

**Nesting Habits of *Empidonax insulicola*.**—I have just read with great interest in 'The Auk' for July, 1897, the paper by Mr. Harry C. Oberholser, describing the *Empidonax* of the Santa Barbara group as a new species under the name *insulicola*. Mr. Oberholser is of course correct in assuming that I mistook the bird for *E. difficilis* in my list of Santa Cruz birds (Auk, IV, 1887, 329), an error to be explained, though not excused, by the fact that I shot no specimens of this species.

If *insulicola* receives general recognition, as appears probable, some account of its habits, nest and eggs will be of interest.

During my visit to Santa Cruz in the summer of 1886 I saw the Island Flycatchers (if I may suggest a vernacular name) constantly; indeed they were among the most abundant of the land birds. They were to be found chiefly along the rocky, wooded cañons, and their habits closely resembled those of the Wood Pewee. The Island Flycatchers, however, seem to prefer a lower perch, generally within six or eight feet from the ground.

Their note is a disyllabic, lisping call difficult to describe; not wholly unlike the characteristic note of the Least Flycatcher, but much less forcible and metallic.

The first nest which I found was built actually in our camp. A stream, swollen by winter rains to the size of a river, had undermined its banks; shrinking in summer to a mere mountain brook, it had left a high, concave bank on either side. Under one of these arching banks was the nest, neatly concealed among the roots which descended from the trees above. It was placed about seven feet above the level of the stream, and not more than twelve feet away from our camp table, which we had set under this bank to secure protection from the sun. The nest was rather small, saucer-shaped, and composed of material evidently gathered from the bed of the stream,—strips of bark, dead grasses and shreds of dry, bleached vegetable matter. It was neatly and compactly made. The two eggs were dead white, not creamy or buff, and sparsely dotted with reddish about the larger end.

From the first we were careful not to frighten the birds, and they soon became accustomed to our presence. One bird would be almost constantly on the nest, while the other would establish a perch on a bush just across the stream, darting off now and then to catch insects on the wing, and frequently bringing them to its mate. The eggs were hatched on the 13th and 14th respectively, and then the parents were kept very busy supplying the young birds with food. On the 18th the young were mysteriously removed from the nest, probably by the parent birds, and I saw no more of that particular family.

On July 10 I found a pair of Island Flycatchers building their nest in a small pocket in the face of a huge projecting rock over the same stream, half a mile above our camp. It was a situation inaccessible without the aid of a long ladder or a rope, and I was unable to examine the nest.

On July 18 I found a bird's nest, which was built in one of the sea-side caves for which Santa Cruz is famous. This was a very compact and



handsome nest, built directly against the wall of rock, five feet above the floor of the cave. The bird was sitting when I found the nest, and returned as soon as I left the cave. There were three eggs, two evidently much incubated and one infertile, which latter I took. These eggs were creamy white, with pale reddish specks and dots about the larger end. The specimen which I secured is now in the collection of Brown University, Providence, R. I.

The Island Flycatchers had nearly all left Santa Cruz (or retreated to distant parts of the island) by the first of August, and I saw none after August 10. — ELI WHITNEY BLACK, *Syracuse, N. Y.*

**The White-throated Sparrow Breeding at Hubbardston, Mass.** — A few pairs of *Zonotrichia albicollis* breed each year, or have for the last two years, among the lower hills (about 1000 feet elevation) about Wachusett Mountain in Hubbardston, Mass. — REGINALD HEBER HOWE, JR., *Longwood, Mass.*

**Henslow's Sparrow in Michigan — A Correction.** — Dr. Charles W. Richmond, Assistant Curator, Department of Birds, U. S. National Museum, calls my attention to a misprint in my article on this species in the April 'Auk' (XIV, p. 220) where, in an extract from his letter, he is made to say "this species ought not to be seen in Michigan." "Seen" should read "rare." I think, however, that Henslow's Sparrow may very properly be termed rare in this State. Should one offer a reward for specimens of this bird taken here he would be surprised at the very few he would obtain. A young ornithologist, in reporting his observations, might easily mistake the Grasshopper Sparrow for this species. — JAMES B. PURDY, *Plymouth, Mich.*

**Nesting of *Cardinalis cardinalis* at Nyack, N. Y.** — During the spring of 1897 there have been not less than six instances of the breeding of *Cardinalis cardinalis* at Nyack, N. Y. Mr. Rowley, of the American Museum of Natural History, tells me that a pair of this species nested at Hastings, N. Y. So far as is known, I believe this constitutes the northernmost breeding record of this bird. — C. L. BROWNELL, *Nyack, N. Y.*

**Notes on the Moults and certain Plumage Phases of *Piranga rubra*.** — In 'The Auk' for July, 1891 (pp. 315, 316) I described an instance wherein the Summer Tanager (*P. rubra*), a female, had assumed the plumage of the male. That specimen was collected by my son, Percy Shufeldt, and has since been added to the collections of the U. S. National Museum. Since that date the same collector has added to his private series, thirteen more specimens of this species, and as some of these exhibit certain notable conditions of the moult and plumage, it is my intention here to pass a few remarks upon the more interesting of these. Twelve of the skins are from male birds, while the thirteenth is from an adult female, taken in

August, 1895, and exhibits the autumnal plumage nearly completed. All these individuals were collected either in the northeastern part of the District of Columbia, or in the adjacent parts of southern Maryland. Of the seven red males in the series taken at random from April 18, 1896, to July 15, only one of them shows the full and completed plumage, and that the one shot on the first-mentioned date. All of the others present more or less green in the wings and tail, and one with a greenish patch on the throat. A specimen, an old male, shot on the 15th of July, 1896, has both the plumage of the entire body and tail red, while the secondaries and primaries of the wings are in the process of the moult,—the new feathers likewise coming in *red*,—the same applying to the wing-coverts. This tends to prove, in so far at least as this particular specimen is concerned, that in the male of this species in the autumnal moult they reassume the red plumage. Another specimen, which I take to be a young male of the first spring, and shot on May 14, 1897, has the body plumage red, with red and green wings, but the tail exactly half red and half green,—the green feathers or the left half of the tail being half a centimeter shorter than the red ones. All these feathers are new, with the exception of one of the green ones, and it is found next to the outermost one of that side. Now the first plumage taken on by both sexes of this species after leaving the nest is the olive-green plumage corresponding to that of the normal adult females, and in that plumage the birds of the year migrate south in the autumn. So that the aforesaid specimen shot on May 14, possibly met with an accident, losing all the feathers of the left side of the tail with the exception of the one mentioned, and these being replaced came in *green*. This seems to be the only explanation to account for the state of affairs seen in this individual.

In another specimen of this series, a young male of the first autumn in the full green plumage, shows a broadish transverse red bar across the green and perfected feathers of the tail.

Perhaps the most interesting specimen in the collection is that of a female (adult) which in the spring had, in part, the red plumage of the male, and when collected on the 2d of August, 1897, was in full moult,—the red feathers of the entire plumage being replaced by the green ones of the adult female bird with normal coloration. This particular example then, would tend to show that when the females of this species assume in the spring the red plumage of the males, that in the autumnal moult they pass back again to the plumage of the normally-colored females,—whereas the *old* males reassume the red plumage.—R. W. SHUFELDT, *Smithsonian Institution, Washington, D. C.*

**Purple Martins (*Progne subis*) Breeding in Electric Arc-light Caps.**—During a recent visit to Vergennes, Vt., I noticed that many pairs of Purple Martins were nesting in the caps suspended over the electric street lamps in the heart of that rural city. Indications of the same proclivity to utilize the street lamps for domestic purposes were shown by

Purple Martins that I watched near North Adams, Mass., in 1895, and Mr. Brewster tells me that he found a pair of these birds breeding in a similar situation in Colebrook, N. H., in 1896. Probably many of the readers of 'The Auk' who live in a Martin region are familiar with this nesting habit of the Martin, though I do not remember to have seen any mention of it in print. The late Frank Bolles ('Boston Post,' Feb. 3, 1891) facetiously remarked that the House Sparrow's propensity to build its nest and rear its young "on the edge of Hades" (*viz.*, in electric-lamp reflectors) was sufficient evidence that it was the offspring of evil and justly under the ban of the Commonwealth. I had always deemed this a just count against the Sparrow, until I discerned the same disposition in our own favorite Martin! I hope the lamp-tenders of Vergennes discriminate between Martins and Sparrows in their daily visits to the lamps.—WALTER FAXON, *Museum of Comparative Zoölogy, Cambridge, Mass.*

**The Tree Swallow Breeding in Virginia.**—The second edition of the A. O. U. Check-List gives the breeding range of *Tachycineta bicolor* as "breeding from the Fur Countries south to New Jersey," etc. Dr. Rives in his 'Birds of the Virginias,' page 77, says of this species: "Common summer resident of the Tidewater region from April to September, but rare away from the rivers." He mentions no instance of its breeding, however. Mr. E. J. Brown, formerly of Washington, tells me that in May, 1894, he found a nest containing eggs, on Smith's Island, Virginia. Mr. P. H. Aylett, of Aylett, King William County, Virginia, wrote me some years ago about a pair which reared their young one summer at that place. I afterwards saw the site—a cherry stump in a meadow. The birds are fairly numerous on Smith's Island in summer, and I found a nest containing three young, in a hollow tree near the ocean beach, on June 10, 1897.—WILLIAM PALMER, *Washington, D. C.*

**Rough-winged Swallows (*Stelgidopteryx serripennis*) in Greene and Ulster Counties, N. Y.**—On May 29, 1897, I found a pair of Rough-winged Swallows beginning to build in Palenville, Greene County, June 11. The nest with six eggs was procured. At Quarryville (about five miles south of Palenville, being in the extreme northern part of Ulster County) there is a small colony of these birds breeding regularly every year, in the crevices of the rocks. Here I took a male specimen June 27, 1896, and a nest containing five eggs June 29, 1897. These specimens were identified by Mr. Frank M. Chapman.—S. H. CHUBB, *New York City.*

**Peculiar Nesting of the Maryland Yellow-throat.**—While collecting in a large slough in Jackson County, Minnesota, on June 9, 1897, amid the green rushes where Long- and Short-billed Marsh Wrens were breeding, I ran across a pair of Yellow-throats (*Geothlypis trichas*) in some high rushes in about four feet of water, and upon investigating I found the nest placed almost level with the water in a thick clump of cat-tails, over fifty feet from shore, and right in the midst of a colony of Marsh

Wrens. The nest was constructed of the usual materials — leaves, bark, and grasses — lined with grape-vine bark and hair, and contained two fresh eggs. This is, I believe, the first recorded instance of the Yellow-throat breeding over water, and is indeed surprising, as the nests are usually to be found in dense woods far from water. — WALTON I. WHITEHILL, *St. Paul, Minn.*

**The Names of Two Mexican Wrens.** — It is now generally believed that Baird was in error when he identified his *Thryothorus bewickii leucogaster* (Baird's Wren, so-called) with the *Troglodytes leucogaster* of Gould (Proc. Zool. Soc., 1836, 89; Tamaulipas). This belief was first expressed by Messrs. Sclater and Salvin (Nomencl. Av. Neotrop., 1873, 155), who identified Gould's bird with *Cyphorhinus pusillus* Scl. (Proc. Zool. Soc., 1859, 372) = *Uropsila leucogastra* Scl. & Salv., 1873. Accordingly Messrs. Salvin and Godman (Biol. Centr.-Amer., Aves, I, 1880, 95) have renamed Baird's bird *Thryothorus bairdi*. It appears to me that these authors, by beginning their history of Baird's Wren with the 'Review of American Birds,' 1864, instead of the 'Birds of North America,' 1858, have overlooked the fact that Baird had Gould's type of *Troglodytes leucogaster*. On page XV of the 'Birds of North America,' Baird says that he received from Gould about 150 species of birds, including some from Mexico, and on page 363 he says that Gould's specimen of *Troglodytes leucogaster* from Tamaulipas agrees perfectly with others in the Smithsonian Museum, — the "others" being the identical specimens which he afterward (in Rev. Amer. Birds) separated from the typical *Thryothorus bewickii* as *T. b. leucogaster*. Gould's type is not included in Baird's list of specimens in the Smithsonian Institution, probably because he intended to return it to Gould. It appears that Messrs. Sclater, Salvin, and Godman did not have Gould's type of *Troglodytes leucogaster* (see Biol. Centr.-Amer., Aves, I, 78); does it, then, seem reasonable to prefer their determination of *Troglodytes leucogaster* Gld. to Baird's, who had not only the type of *T. leucogaster* Gld. but also one of the types of *Cyphorhinus pusillus* Scl. (see Rev. Amer. Birds, p. 120)? Messrs. Sclater and Salvin's opinion concerning the identity of Gould's bird doubtless had its origin in the ill fit of Gould's measurements and the incompleteness of his diagnosis when confronted with skins of Baird's Wren. Gould's measurements do not seem to fit either Baird's *leucogaster* or Sclater's *pusillus*, for that matter:

	Length.	Wing.	Tail.	Bill.	Tarsus.	
<i>Troglodytes leucogaster</i> Gld.	2.75	2	1.12	.75	.33	(Gould.)
<i>Cyphorhinus pusillus</i> Scl.	{ 3.5	1.75	1.1	.7	.75	(Sclater.)
	{ 3.5	2.05	1.35			(Baird.)
<i>Thryothorus bewickii leucogaster</i> Bd.	{ 4.7	2.1	2	.75	.6	(S. & G.)
	{ 5-5.75	2.1-2.4	2.1-2.55	.5-.6	.68-.78	(Ridgw.)

Canon XLIII of the A. O. U. Code of Nomenclature provides that "in no case is a type specimen to be accepted as the basis of a specific or

sub-specific name, when it radically disagrees with or is contradictory to the characters given in the diagnosis or description based upon it." This ruling, if strictly enforced, precludes the use of the name *leucogaster* for Baird's Wren. Under such circumstances, following the directions given in the Code, the bird must be "reintroduced into science under a new name, as a new species, and with a proper description." Mr. Ridgway (Auk, IV, 1887, 349) long ago maintained that Dr. Hartlaub described Baird's Wren, as *Thryothorus murinus*, in 1852 (Rev. et Mag. de Zool., 2d Sér., IV, 4),—twelve years before Baird called it *Thryothorus bewickii leucogaster* (Gld.), and twenty-eight years before Messrs. Salvin and Godman again introduced it as *Thryothorus bairdi*.

Baird's Wren has figured in both the first and second editions of the A. O. U. Check-List as *Thryothorus bewickii bairdi* (Salv. & Godm.). In the Eighth Supplement to the Check-List (Auk, XIV, 1897, 131), this name is changed to *T. b. leucogaster* Baird (*nec* Gould!) in compliance with the views of Dr. Coues (Auk, XIII, 1896, 345). It seems to me that Mr. Ridgway, although starting with the false premise that *Troglodytes leucogaster* Gld. equals *Cyphorhinus pusillus* Scl., arrived at the correct name for Baird's Wren when he called it *Thryothorus bewickii murinus* (Hartl.). If Mr. Ridgway's determination of *murinus* be questioned, it should be tested by an appeal to Dr. Hartlaub's types in the Museums of Bremen and Hamburg; if it prove erroneous, then the name *bairdi* Salv. & Godm. becomes available as the subspecific name for Baird's Wren. After what has been shown above concerning Baird's acquaintance with the type of *Troglodytes leucogaster* Gld., it seems no longer justifiable to identify it with *Cyphorhinus pusillus* Scl., which should now be known as *Hemiura pusilla* (Scl.), not *H. leucogastra* (Gld.).—WALTER FAXON, *Museum of Comparative Zoölogy, Cambridge, Mass.*

**Rare Birds in the Vicinity of Philadelphia.**<sup>1</sup>—On Sept. 5, 1894, a specimen of *Contopus borealis* was secured near Holmesburg, Pa., and on May 18, 1895, a specimen of *Empidonax traillii alnorum* was secured.

This is, I believe, the first definite record for the latter in this part of the State, as I am unable to find any in Stone's 'Birds of Eastern Pennsylvania and New Jersey.'

While collecting in Tinicum Township, Delaware Co., Pa., May 15, 1897, I secured a male *Piranga rubra*. This is the third record during the last twenty years for this species in this part of the State.—H. W. FOWLER, *Holmesburg, Philadelphia, Pa.*

**Notes on Some Ontario Birds.**—Occasionally Brännich's Murre (*Uria lomvia*) has been reported in Lake Ontario late in the fall and in early winter; in fact this bird is not an infrequent visitor at Kingston in the

<sup>1</sup> Republished, with an addition and correction, from the July number of 'The Auk' (XIV, p. 326), where the authorship was accidentally credited to Mr. Witmer Stone.—EDD.



early winter. This summer three Murres were observed early in July. One was captured alive by Chas. M. Clarke on July 8, but died in a few days, and the others were found dead by Mr. Edwin Beaupre, Jr., and a friend, about a week after this date. All three birds died of starvation, without doubt.

The Knot (*Tringa canutus*), reported as very rare in Ontario, visits Kingston from time to time, and on June 2, 1897, Mr. Edwin Beaupre and I saw several on Amherst Island, one of which was secured. The one shot by Mr. Beaupre was with a large flock of Golden Plovers.

McIlwraith in his excellent work, 'Birds of Ontario,' reports the Bartramian Sandpiper (*Bartramia longicauda*) as seldom seen in Ontario. This bird has of late years taken possession of Simcoe Island, Wolfe Island, Amherst Island and many of the fields between Lansdowne and Napanee, a distance of fifty miles, and is found breeding freely. It is not disturbed by the farmers and appears to be steadily increasing in numbers.

The Black Tern (*Hydrochelidon nigra surinamensis*), not reported in the east of Ontario, breeds at Kingston and Lansdowne. The Rev. C. J. Young has taken eggs at Lansdowne, and this year I found several pairs breeding in Cataragui Marsh. Have observed the bird regularly for many years.

The White-rumped Shrike reported as rare by McIlwraith in the east of Ontario, is abundant about Kingston, probably owing to the fact that several varieties of thorns are common here.—C. K. CLARKE, M.D., Kingston, Ontario, Can.

**Rare Birds taken in Toronto and Vicinity.**—*Ammodramus leconteii*. LECONTE'S SPARROW.—A male specimen was given to me as an Acadian Sharp-tailed Sparrow, taken May 5, 1897, in Toronto. This is the first one known to have been taken in Ontario.

*Colymbus holboellii*. HOLBELL'S GREBE.—Six specimens have been taken in Toronto between April 26 and May 1, three of which are now in my collection.

*Lagopus lagopus*. WILLOW PTARMIGAN.—While visiting a taxidermist shop in Toronto my attention was drawn to this specimen, which was taken in Whitby, thirty miles east of Toronto on May 15, 1897. Having a friend there I wrote to him, and he got for me the particulars about the bird, which is now in my collection. It is in its winter plumage, with the exception of a few brown feathers which are appearing about the head and neck. The tail-feathers have a slight brown tinge. Sex not given.

*Ardetta neoxena*. CORY'S LEAST BITTERN.—A male was taken in Toronto May 14 by G. Pearce. The plumage shows traces of albinistic markings, as follows: one white feather on the abdomen near the vent, and four white feathers on the inside of each tibia. It is now in my collection.

The female was taken in the same locality by the same person on June 30, 1897,—a very fine specimen with plumage normal and no traces of albinism.



*Ægialitis nivosa*. SNOWY PLOVER. — On July 6 there was brought to me for my inspection a Snowy Plover in the flesh. So far as is known this is the third record for Toronto. — J. H. AMES, *Toronto, Canada*.

**Disgorgement among Song-birds.** — In response to the suggestion appended to Mr. Joseph Grinnell's interesting note in regard to 'Disgorgement among Song Birds,' which appeared in the last number of 'The Auk,' I am moved to jot the following.

While observing the nesting habits of Wood Thrushes — more than a score of years ago — my curiosity was first aroused as to how those birds managed to so perfectly clean — polish, I might say — the quantity of cherry stones I used to find in their nests. After a time I noticed that the parent birds fed to their young broods the cherries whole, as they were brought from the trees, scattered sparsely in the adjacent woods. These cherries, I may say, were noticeably smaller than such as are of average market size, being such as are termed by botanists 'escapes,' and it was not uncommon to find a fair handful of the stones in each nest in a proportion of those examined.

But two or three years later, when the chance occurred of watching the process of rearing by hand a couple of broods of Wood Thrushes. I observed that when the half-fledged young ones were fed with small cherries, unbroken, that afterwards at short intervals — as the pulp was digested — they raised the cherry stones in their throats and expelled them, perfectly clean, from their bills. Occasionally only a single stone was thus ejected, but, more generally, two or three at a time would follow each other rapidly. And in this way it happened that I first understood how it came about that the cherry stones found in Wood Thrushes' nests were polished.

Since then, however, I have had many opportunities of observing that the habit of disgorging the stones of small fruits and the large seeds of some berries, such as those of the dogwood and Virginia creeper, is common to various species of birds; and besides those named, in this respect, by Mr. Grinnell, I have witnessed it in all our true Thrushes except (for lack of opportunity) Bicknell's Thrush. Among Warblers, etc., I have noticed that this habit is possessed by the Red-eyed Vireo, Myrtle Bird, European Robin and larger Pettichaps — this latter observed only in captivity.

But as far as my observations extend, I am inclined to think that such birds as are both insectivorous and frugivorous and whose practice is also, wholly or mainly, to peck their food to little bits before swallowing it, as is the case with the Brown Thrushes and Catbird, for examples, do not possess this habit of disgorgement. — THOMAS PROCTOR, *Brooklyn, N. Y.*

**Disgorgement of Cherry Stones again Noted.** — Mr. Joseph Grinnell's notes on the 'Disgorgement of Song-birds,' Auk, Vol. XIV, 1897, page 318, have prompted me to describe a similar experience I had this summer while photographing a nest near Philadelphia, Pa. After tying my

camera to a tree and focusing for a close range picture on a nest bulging with young Robins, I noticed them disgorging cherry stones, one of which dropped on the side of the nest, and rolled back inside. The parent birds almost universally remove all excrement from the nest, but it was evident that they did not trouble themselves about removing the clean cherry stones, and on examination of several nests of the Robin, Wood Robin, and Catbird, I found as usual that they each contained from ten to fifteen stones, but, as I had never specially noted before, were perfectly clean, and must have been disgorged in all cases.

I concluded, therefore, that nature has only provided the small bird with this means of getting rid of the stone, which is too large to pass beyond the cavity of the stomach. I only wonder that I never thought of it before, for during cherry season, in nearly every old nest, at least of the varieties mentioned, will be found a clean little pile of cherry stones.— WM. L. BAILY, *Ardmore, Pa.*

**Birds' Tongues in Pictures.**—During this spring I have had especial opportunity to study song birds (Vireos, Warblers, House Wren, Catbird, Sparrows, Grackles, Orioles),<sup>1</sup> and one point of interest which I have determined to my satisfaction is that from a distance of a few feet, with a strong opera glass, a bird's tongue *cannot* be seen between the open mandibles when singing. In almost all drawings or paintings of singing birds one will find the elevated tongue shown clearly. The musical instrument of a bird is not its tongue, as almost every one knows; the sounds and modulations are produced in the throat and therefore why should the tongue be expected to show (except, perhaps, as a modulator).

To cut the tongue out of a picture of a singing bird detracts from it and looks exceedingly strange, solely because we are used to seeing it so in likenesses, but not in life—but the portrait nevertheless becomes true to nature.— REGINALD HEBER HOWE, JR., *Longwood, Mass.*

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## RECENT LITERATURE.

**Citizen Bird.**<sup>2</sup>—'Citizen Bird' is a unique contribution to the literature of Ornithology. It addresses an audience which ornithologists had previously neglected and does it in so attractive a manner that the reader's attention is held from cover to cover. With perhaps no desire

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<sup>1</sup> I had no opportunity of observing Thrushes, except the Robin.

<sup>2</sup> Citizen Bird | Scenes from Bird-Life in Plain | English for Beginners | By Mabel Osgood Wright | And | Elliott Coues | With one hundred and eleven Illustrations | By Louis Agassiz Fuertes | New York | The Macmillan Company | London: Macmillan & Co., Ltd. | 1897 | All rights reserved | 12mo. pp. xiv + 430. Engraved half-tones in text, 111. (Price, \$1.50.)

for a knowledge of birds he is deluded into reading a story where the human element commands his interest, and if while reading he does not soon learn to care for birds for their own sake, it is because his nature is abnormally unsympathetic.

The plan of the book will explain how well adapted it is to achieve this end. 'Dr. Roy Hunter' with his daughter, nephew and niece, a country boy and two or three others, are passing the summer at 'Orchard Farm,' and the book is made up of a series of field and study talks in which the children are eager questioners and often keen observers, while the Doctor is ever present to explain in an always interesting manner the significance of the scenes from bird-life by which they are surrounded. The children themselves are so bright, the Doctor so responsive, that other children reading this record of a summer with the birds will not only become attached to its human characters, but to its feathered ones as well, and at the same time will unconsciously absorb an extensive and correct knowledge of ornithology.

The text is made more real by Mr. Fuertes's beautiful drawings, and their charm in turn is increased by the text, which makes us regard them as we would the portraits of the leading characters in a fascinating story. It is evident, therefore, that both authors and illustrator have made not only an important contribution to literature and art, but that they have rendered an invaluable service to science in so sharpening the entering wedge of bird-lore, that it may now find openings which before were closed to it. — F. M. C.

**Birds of Maine.**<sup>1</sup> — Mr. Knight and his *confrères* deserve the thanks of all ornithologists for rendering accessible so large an amount of information concerning the birds of Maine. The list proper enumerates 316 species and subspecies as known to occur in the State. After each species an outline of its general status as a Maine bird is given, and this is followed by a brief statement of its manner of occurrence in each county, based on the notes of many observers whose names are placed in parentheses after the remarks for which they are responsible. To this list, occupying pp. 13-132, are appended sections on 'Introduced Species,' the Domestic Pigeon and House Sparrow being here included; a 'Hypothetical List,' giving 27 species, and a 'Summary' in which an analysis of the avifauna of the State is presented. There is also a brief but well considered essay on 'Faunal Areas' with special reference to the distribution of life in Maine, while a Bibliography and an Index complete an excellent piece of work. — F. M. C.

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<sup>1</sup> Bulletin No. 3. | The University of Maine | Department of Natural History. | A List of the | Birds of Maine | Showing their Distribution by Counties and their Status in each County. | Prepared under the auspices of the United Ornithologists of Maine | By Ora W. Knight, B. S., | Assistant in Natural History. | Augusta | Kennebec Journal Print | 1897.— 8vo. pp. 184.

**Winge on Birds at the Danish Lighthouses.**—Mr. Herluf Winge's fourteenth annual report on the migration of Danish birds is of special interest to students of American ornithology on account of the further records that it contains of the little known Petrel, *Oceanodroma cryptoleucura* Ridgway, added to our fauna by Mr. Wm. Palmer in the last number of 'The Auk.' Two of these birds struck Danish lightships during the autumnal migration of 1896, one at Drogden, a few miles south of Copenhagen, on September 19, and another at Kobbergrundten, in the Kattegat, on October 11. After comparison of these specimens with the 16 skins of *O. leucorhoa* in the Zoölogical Museum at Copenhagen Mr. Winge concludes that the characters of *O. cryptoleucura* are purely individual and that typical examples of the so-called species may be expected to occur among any of the colonies of Leach's Petrel. It is extremely doubtful whether this view of the relationship of the bird to *O. leucorhoa* can be sustained, as the characters described by Mr. Ridgway and Mr. Palmer can hardly be reconciled with any such hypothesis.

The fourteen yearly reports on Danish birds,<sup>1</sup> the last twelve of which

- <sup>1</sup> I. Jahresbericht (1883) | über die | ornithologischen Beobachtungsstationen in Dänemark. | Von | Chr. Fr. Lütken | Dr. phil. | < Ornis, I, Heft 1, pp. 82-147. 1885.
- II. Jahresbericht (1884), etc. as above. *Ibid.*, II, pp. 49-100. 1886.
- III. Report on Birds in Danmark in 1885 | Compiled by | Oluf Winge | *Ibid.*, II, Heft IV, pp. 551-600. 1886.
- IV. Report on Birds in Danmark in 1886 | Compiled by | Oluf Winge | *Ibid.*, IV, Heft III, pp. 369-440, Taf. 1. 1888.
- V. Report on Birds in Danmark in 1887 | Compiled by | Herluf Winge | *Ibid.*, VI, Heft 2 and 3, pp. 345-399. 1890.
6. Fuglene ved de danske Fyr i 1888 | 6te Aarsberetning om danske Fugle | Ved | Herluf Winge | (Med et Kort) | < Vidensk. Meddel. fra den naturh. Forening i Kbhvn. XLII, pp. 54-105 (1890) 1891.
7. Fuglene, etc., i 1889, 7de Aarsberetning, etc., *Ibid.*, XLII, pp. 106-157 (1890), 1891.
8. Fuglene, etc., i 1890, 8de Aarsberetning, etc. *Ibid.*, XLIII, pp. 61-132, (1891), 1892.
9. Fuglene, etc., i 1891, 9de Aarsberetning, etc. *Ibid.*, XLIV, pp. 77-130, Tab. IV (1892), 1893.
10. Fuglene, etc., i 1892, 10de Aarsberetning, etc. *Ibid.*, XLV, pp. 21-77 (1893) 1894.
11. Fuglene, etc., i 1893, 11te Aarsberetning, etc. *Ibid.*, XLVI, pp. 15-71 (1894) 1895.
12. Fuglene ved de danske Fyr i 1894 | 12te Aarsberetning om danske Fugle | Med Tillæg om nogle islandske og grønlandske Fugle | Ved | Herluf Winge | *Ibid.*, XLVII, pp. 1-66 (1895), 1896.
13. Fuglene, etc., i 1895, 13de Aarsberetning, etc., (as in titles previous to No. 12). *Ibid.*, XLVIII, pp. 65-117 (1896), 1897.
14. Fuglene, etc., i 1896, 14de Aarsberetning, etc. *Ibid.*, pp. 238-310. 1897.

Mr. Winge and his brother have published, are almost wholly unknown to American readers. This is to be regretted, as a more admirably conceived and executed series of observations could scarcely be imagined, and the work might well be used as a model to be followed—with necessary modifications to suit local conditions—by local ornithological societies. With the exception of some of the earliest papers, all are arranged on essentially the same plan, so that a brief outline of the last will give an idea of the scope and contents of each number of the series.

The report for 1896 occupies 72 pages, slightly more than the average, and is divided into six sections. The first of these contains the following miscellaneous introductory matter: A statement of the number of species (65) and specimens (1048) of birds sent by light keepers to the Zoölogical Museum at Copenhagen; a list of the lights (35) from which returns were received; a nominal list of the species represented, together with the number of specimens of each received, as well as the number killed where this is known; a statement of the total number of species recorded during the past ten years (134); the author's personal observations on the movements of birds in the neighborhood of Copenhagen. The five sections into which the main body of the report is divided are arranged under headings which may be translated as follows: (1) Catalogue of the Birds sent in from the Lights; (2) Summary of the Nights on which Birds came to the Lights; (3) Various Observations from the Lights; (4) Unusual Occurrences in 1896; (5) Observations from the Faroes.

In the first section the nominal list from the introduction is repeated, now, however, profusely annotated, always with the locality and date for each specimen sent in (for some species this alone occupies a page or more of text arranged chronologically and with the months alone paragraphed), and often with extended critical remarks of varied character.

The second section consists of the keepers' observations on weather conditions during the nights when birds were observed, together with their accounts of the actions of the birds themselves. In this section the matter is arranged chronologically, the various reports for each night grouped together. The keepers naturally refer to the birds by their common Danish names, but at the end of each day's series of observations Mr. Winge gives technical names of such species as were forwarded to the Zoölogical Museum. Owing to the author's peculiar views on the subject of nomenclature the vernacular names are to an American reader in many instances the more intelligible of the two.

In the third section the keeper's report from each light for the whole year is given entire. These reports are not classified alphabetically, but are arranged in a rough geographical sequence, beginning with the lights on the west coast and ending with those at the extreme southeast. Some of these reports cover more than three pages of running text and indicate a remarkable amount of interest on the part of the keepers.

The fourth and fifth sections, which together occupy only four pages,



contain respectively comments on such occurrences during the year as seem of special interest, and the observations received from the Faroes.

The paper ends with a map, showing the locations of about eighty Danish lights. — GERRIT S. MILLER, JR.

**Lane's Field-Notes on the Birds of Chili.**<sup>1</sup>—Students of South American birds should be grateful to Dr. Sclater for publishing the valuable series of notes constituting this paper. Mr. Lane was sent to Chili by the late Mr. H. B. James to gather material which, in connection with his own observations, was to be used in a proposed work on Chilean birds.<sup>2</sup> Lane was in the field from November, 1889, to December, 1890, during which time he made collections and observations near Santiago, in the Province of Tarapacá, in northern Chili, and in the Provinces of Arauco and Valdivia and the Island of Chiloe in southern Chili. The notes here given by Dr. Sclater from Lane's journals relate to 124 species and are of exceptional interest. They were evidently written by a keen, appreciative observer, and he gives us well-drawn character sketches of birds concerning whose life histories we previously had very little reliable information. Often a page or more is devoted to a description of the habits and haunts of a single species and there are particularly satisfactory accounts of such representative Chilean species as members of the genera *Phytotoma*, *Pteroptochus*, *Hylactes*, *Thinocorus*, *Nothoprocta* and others.—F. M. C.

**Richmond on Madagascan Birds.**<sup>3</sup>—As a result of a few months' collecting (February to July, 1895) in Madagascar, mainly on the east coast, Dr. Abbott has forwarded to the U. S. National Museum 217 specimens of birds. These are referred by Dr. Richmond to 83 species, one of which, *Ægialitis thoracica*, he has before described,<sup>4</sup> while two others, *Thalassornis insularis* and *Copsychus inexpectatus*, are here for the first time described as new.—F. M. C.

**An Ohio Grackle Roost.**<sup>5</sup>—This paper contains the results of one season's work, from the arrival of the Grackles on March 9 to their

<sup>1</sup> Field-notes on the Birds of Chili. By Ambrose A. Lane. With an Introduction and Remarks by P. L. Sclater. The Ibis, January, 1897, pp. 8-51; April, pp. 177-195; July, pp. 297-317. Figs. 5.

<sup>2</sup> Cf. Auk, X, 1893, p. 354.

<sup>3</sup> Catalogue of a Collection of Birds made by Doctor W. L. Abbott in Madagascar, with Descriptions of three new species. Proc. U. S. Nat. Mus., XIX, pp. 677-694. Received May 19, 1897.

<sup>4</sup> Proc. Biol. Soc. Wash., X, 1896, p. 53.

<sup>5</sup> The Oberlin Summer Grackle Roost. By Lynds Jones. = Bulletin No. 15, Wilson Ornithological Chapter of the Agassiz Association. Oberlin, Ohio, July 30, 1897. 12mo. pp. 37-56, 2 maps, 1 cut in text.



departure on October 31. During this time the study of these birds was the observer's chief object; his record of their movements sometimes began at 3 A. M. and continued until the birds had left the roost, and in the evening he was again at his post to note their return. We have, therefore, a detailed history of the lives of these birds during their presence on their breeding grounds, by an ornithologist whose enthusiasm permitted no relaxation in the care with which his observations were made, and whose experience fitted him to direct his efforts most effectively. His study shows that "during courtship and nesting, each occupying about two weeks under normal conditions, none of the Grackles flock together to pass the night, whatever they may have done previously; but as soon as incubation has well begun the old males seek the shelter of some convenient grove and pass the night there with others of their kind. As soon as the most forward young are able to fly, they are escorted to the common roost by the old male, or if the whole brood should develop at the same time, by both parents; and where there is any marked difference in the development of the young of the same brood, the later ones, accompanied by the old female, bring up the rear. The young are fed for some days after they begin to roost with the old ones. . . . In general, the birds depart from the roost with the rising sun, and return to it at sunset. Singing and calling begin with the break of day, and continue until the birds depart for their feeding grounds. At night there is comparatively little singing, and all noise and shifting about cease as darkness falls. Early in the season the birds arrive and depart independently of each other, but with the advancing summer flocking increases, until finally all move as one individual." The paper is to be commended for its clear presentation of an admirable piece of field work. — F. M. C.

**Cory's Shore Birds of North America.**<sup>1</sup> — This work is constructed on the same lines as the author's 'How to know the Ducks, Geese and Swans,' and his 'Key to the Water Birds of Florida,' published originally in his 'Hunting and Fishing in Florida' (reviewed in this Journal, XIII, 1896, pp. 246, 247). It is intended, the author says, "to meet the wants of a large number of persons, especially sportsmen, who are interested in birds and would like to know their names, but often find it no easy task to identify them by the 'bird books.' To all such I offer this Key, in which the species are arranged in groups according to size," etc. The work consists of a few introductory pages, describing how to measure birds, a glossary of technical terms, and an 'Index to the Key,' followed

<sup>1</sup> How to know | the Shore Birds | (Limicolæ) | of North America | (south of Greenland and Alaska | all the species being grouped according to size and color | — | By Charles B. Cory | . . . [= 9 lines, titles and list of the author's principal publications] | — | For sale by | Little, Brown & Co. | Boston | 1897 — Small 4to, pp. 89, with numerous illustrations.

by the 'Key to the Species' (pp. 13-29), and then by formal descriptions, in systematic sequence, of the North American species of Limicolæ. Both the 'Key' and the body of the work are profusely illustrated with half-tone and line cuts of heads, feet, tail-markings, etc., with some full-length figures, which, with the key and the descriptive text, must serve to make identification a simple matter. Besides the technical descriptions, a brief account is given of the distribution and life history of each species. — J. A. A.

Chapman's 'Handbook,' 4th Edition.<sup>1</sup>—The increasing demand for ornithological text-books is shown by the fact that the publishers of this work have issued a fourth edition of this work within two years of its publication. The present edition differs from the preceding ones through some slight alterations in the text and in the addition of an 'Appendix,' giving a list of the numerous changes in nomenclature, etc., which have occurred since the appearance of the first edition.—J. A. A.

Hartert on the Podargidæ, Caprimulgidæ and Macropterygidæ.—The first part of the division of 'Das Tierreich' devoted to Aves is by Mr. Hartert, and includes the three families Podargidæ, Caprimulgidæ and Macropterygidæ, or the Goatsuckers and Swifts.<sup>2</sup> For this work Mr. Hartert is especially fitted, being the monographer, five years ago, of these same groups for the British Museum 'Catalogue of Birds.'<sup>3</sup> The considerable number of species described since the appearance of the 'Catalogue,' are here duly interpolated, but there are comparatively few changes in nomenclature. *Nanochordeiles* is a new generic division for *Chordeiles pusillus* Gould, while *Cosmetornis* is suppressed. The family name Cypselidæ gives place to Macropterygidæ, and we have *Apus* in place of *Micropus*, and Apodinæ in place of Cypselinæ,—these changes being adopted from Dr. A. Reichenow, but they are apparently not tenable.<sup>4</sup>

The text consists of brief diagnoses of all the groups, from families to subspecies, with analytical tables, and the citation of the synonymy

<sup>1</sup> Handbook of Birds of Eastern North America. . . . By Frank M. Chapman. 12mo, pp. xiv + 431. Fourth Edition. New York. D. Appleton & Co. 1897. \$3.00.

<sup>2</sup> Podargidæ, Caprimulgidæ und Macropterygidæ bearbeitet von Ernst Hartert, Direktor des Zoologischen Museums in Tring (England). Mit 16 Abbildungen im Texte. Berlin: Verlag von R. Friedländer und Sohn. = Das Tierreich. Eine Zusammenstellung und Kennzeichnung der rezenten Tierformen. Herausgegeben von der Deutschen Zoologischen Gesellschaft. General Redakteur: Franz Eilhard Schulze. — 1. Lieferung. Aves. Redakteur: A. Reichenow. — 8vo, pp. viii + 98. (Subscription price, 4.50 marks.)

<sup>3</sup> Cf. Auk, X, 1893, pp. 67, 68.

<sup>4</sup> Cf. Stejneger, Science, N. S., V, No. 126, p. 847, May 28, 1897.

and most important references. The work is thus condensed, yet sufficiently comprehensive to meet the needs of the specialist and general student, for whom the work is particularly designed. If the succeeding bird parts conform to the present standard it will be of the utmost service, and deserve the wide support we heartily wish it. — J. A. A.

**Mearns on the 'Ornithological Vocabulary of the Moki Indians.'**<sup>1</sup> — In this paper the Moki names are given for most of the birds found in the Moki country in Arizona, some two hundred or more in number. The list was prepared with the aid of Dr. Mearns's "venerable friend Ongwischey (Raven)," an intelligent Indian who took interest in the work. A brief account of the Moki people and their country precedes the vocabulary of bird names. In addition to the names there are annotations here and there of much ornithological interest, but the paper is mainly of value to the anthropologist. — J. A. A.

**Papers on Economic Ornithology.** — Mr. Sylvester D. Judd's paper entitled 'Methods in Economic Ornithology, with special reference to the Catbird'<sup>2</sup> is of special interest, aside from its bearing on Economic Ornithology, from the fact that insects supposed to be distasteful to birds on account of their nauseous odors or more or less acrid secretions, do not in fact prove to be so, and are thus not secure from the attacks of birds by these supposed 'protective' qualities, as so many writers on 'protective mimicry' have assumed. Thus Mr. Judd has found that 9 out of 13 Catbirds taken in a little gully near Washington, on July 30, 1895, where ripe elderberries and blackberries were abundant, had partaken liberally "of the destructive locust beetle, 18 of these orange and black pests having been taken from one bird. This is surprising, because beetles of this family (Chrysomellidæ) secrete a substance which is supposed to be distasteful to birds. . . . In the insect food of these birds there were no ants or grasshoppers, but, on the other hand, the supposedly distasteful locust leaf mining beetles." Again, in his experiments with live birds kept in a cage for the purpose of studying their food preferences, Mr. Judd found that "Stink bugs (Pentatomidæ), whose nauseating odor is familiar to every one who has been berrying, were eaten by the Catbirds, even when they had been well fed with other food." He says further: "Bad smelling beetles (Carabidæ), which have been supposed to develop their stench to protect them from birds, were snatched as soon as they were put on the cork" (a floating cork island in a large bowl of water, used to prevent the insects escaping). That this preference was not due to confinement or unnatural conditions is shown by the fact that "Beetles formed, in the 200 [wild] Catbird stomachs examined, the most important part of the

<sup>1</sup> Amer. Anthropologist, Dec., 1896, pp. 391-403.

<sup>2</sup> American Naturalist, May, 1897, pp. 392-397.

animal food, and among these beetles strong scented *Carabidæ* were found oftener than any others." Here is certainly 'food for reflection!'

Mr. Judd, in this excellent paper, not only treats of the food of the Catbird, but gives an exposition of the methods employed in his investigations, where observations on the habits of the wild birds in the field are supplemented by experimentation with captive birds as to their food preferences, and by stomach examinations to ascertain what wild birds have actually eaten. The results of Mr. Judd's investigations are highly favorable to the much maligned Catbird. While it has a partiality for fruits, experiment shows that it prefers mulberries to strawberries and cherries, and that these latter were never touched when mulberries were at hand. Also that the Catbird prefers red mulberries to white mulberries. It is further inferred that cherries and strawberries can be protected from the depredations of the Catbird by planting mulberries.

Mr. F. E. L. Beal writes of 'The Blue Jay and its Food,'<sup>1</sup> and states that "the examination of nearly 300 stomachs shows that the Blue Jay certainly does far more good than harm." It destroys "some grasshoppers and caterpillars and many noxious beetles," and "gathers its fruits from nature's orchard and vineyard, not from man's; corn is the only vegetable food for which the farmer suffers any loss, and here the damage is small." Mr. Beal's examinations of the Blue Jay's stomachs leads him to an optimistic view of his nest-robbing proclivities, which do not sustain "the accusations of eating eggs and young birds." The charges have no doubt been exaggerated, for no reasonable observer would assert that "eggs and young birds constitute the chief food of the Blue Jay during the breeding season." It is not perhaps strange that only a few of the birds examined were taken 'red-handed.'

Mr. Beal is also author of 'Some Common Birds in Their Relation to Agriculture,' issued by the U. S. Department of Agriculture as 'Farmer's Bulletin No. 54 (pp. 40, May, 1897), which "contains brief abstracts of the results of food studies of about thirty grain and insect-eating birds, belonging to 10 different families." These are the Cuckoos, Woodpeckers, Kingbird, Phoebe, Blue Jay, Crow, Bobolink, Red-winged Blackbird, Meadowlark, Baltimore Oriole, Crow Blackbird, Sparrows, Rose-breasted Grosbeak, Swallows, Cedarbird, Catbird, Brown Thrasher, House Wren, Robin, and Bluebird. Many of these abstracts are based on reports previously published by the United States Department of Agriculture in special 'Bulletins' or in its 'Yearbooks,' but others appear to be advance statements of results reached in investigations, the details of which have not yet been published. About a page of text is given to each species, which suffices for a clear summary of its status in relation to agriculture, based on scientific investigation of its food habits under the direction of the chief of the Biological Survey of the U. S. Department of Agriculture,

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<sup>1</sup> Yearbook of the U. S. Department of Agriculture for 1896 (1897), pp. 197-206.

by his corps of assistants. Full-length text-figures illustrate 22 of the species treated. This opportune compilation cannot be too widely distributed, as it carries convincing evidence of the great economic importance of bird life to agriculture.

Another important and instructive paper recently issued under the same auspices is Dr. T. S. Palmer's 'Extermination of Noxious Animals by Bounties.'<sup>1</sup> Reference is made to both mammals and birds, and the conclusion is reached that this method of attempting the extermination of noxious animals is both expensive and futile. The objections to the system are (1) that the expense is out of all proportion to the benefit gained; (2) the impossibility of maintaining bounties in all parts of an animal's range; (3) the impossibility of maintaining equal rates in all States; and (4) the impossibility of preventing fraud, as the payment of bounties on animals imported from outside areas, or especially raised for the purpose, or for 'counterfeit scalps,' innocent species being palmed off on the ignorant official for injurious ones. This is especially liable to occur in the case of birds, and notably where bounties are offered for the House Sparrow. The statistics here given show that during the last twenty-five years not less than 3,000,000 of dollars have been expended for bounties within the United States, with the result that not a single species has thereby been exterminated, and, in most cases, with little benefit. As the custom of offering bounties is, however, apparently on the increase, this timely exhibit of how the scheme works ought to be of advantage as regards the future. The matter of holding the really noxious species in check by other methods is also intelligently discussed. — J. A. A.

**Whitlock's Review of Herr Gätke's Views on the Migration of Birds.<sup>2</sup>**

—In this extended critique of Herr Gätke's 'Heligoland,' the writer disclaims "any feelings towards Herr Gätke but those of the warmest admiration and respect." He says he "looked forward to the appearance of Herr Gätke's long-expected work with the greatest interest. On its first perusal, the novelty of the author's statements greatly impressed me, and after careful study I found them very difficult of acceptance." He then, he says, formed the plan of writing a paper on it for one of the current ornithological journals, but he soon found the subject too great to render this practicable, and hence this separate form of publication. His "sole aim has been to place the other side of the question" before his readers. Of Herr Gätke's work he says: "The opinions he expresses, on the

<sup>1</sup> Yearbook of the U. S. Department of Agriculture for 1896 (1897), pp. 55-68.

<sup>2</sup> The Migration of Birds | A Consideration of Herr Gätke's Views | By | F. B. Whitlock | Author of "Birds of Derbyshire," etc., etc. | (All rights reserved) | London | R. H. Porter | 7, Princes Street, Cavendish Square, W. | 1897.—8vo, pp. vi + 140. (Price, 3s. 6d. net.)



special department of ornithological science, for the study of which Heligoland is so pre-eminently adapted, will naturally have the greatest weight with all, and some in their admiration for the veteran observer have formed the opinion, that all, or nearly all of our previous conceptions, as to the direction, altitude and velocity of the migratory flight, will have to be greatly modified or altogether abandoned in favour of those he sets before us."

After a few pages of introductory remarks, Mr. Whitlock takes that part of Herr Gätke's 'Heligoland' treating of the 'Migration of Birds' (pp. 3-148, English ed.), to which he chiefly confines his remarks, systematically taking up the various points that are especially Gätkean. Space will not permit us to follow Mr. Whitlock's critical analysis of Herr Gätke's many extraordinary statements regarding plain matters of fact, to say nothing of his astonishing inferences and assumptions. As to the former, our author says, with an evident feeling of kindness: "It will be readily admitted that to arrive at an accurate result in calculating the numbers of rapidly moving objects is very difficult. It is equally difficult to arrive at a proper estimate of the value we are to place on the author's computations. In particular instances the reader can hardly fail to be struck by evidence of the grossest, though no doubt unintentional, exaggeration. This must perhaps be attributed to the artistic element in Herr Gätke's nature." (p. 11.)

Mr. Whitlock combats at length Gätke's theory of a general east and west migration, and migration by a 'broad front' as against fly lines, bringing much evidence against it from even Gätke's own statements. After an extended discussion of the subject he says (p. 39): "It is difficult to see on what grounds Herr Gätke has based his theory that the general course of migration tends from east to west."

The absurdity of many of Gätke's theories and assumptions is mercilessly exposed by Mr. Whitlock's simply bringing to bear upon them a little common sense and well-known physical laws, especially on the supposed 'altitude' and 'velocity' of migration flight and the assumed influence thereon of certain meteorological conditions.

In regard to Gätke's objections to current views on the "cause of the migratory movement," and on "what guides birds during their migrations," Mr. Whitlock says of the former (p. 114): "It has been previously pointed out that so far from enunciating any theory of his own . . . Herr Gätke frankly avows himself disinclined to undertake the task. The chapter in his work he devotes to the question is, therefore, nothing but a statement of his objections to the theories of others. . . . It is, perhaps, not to be wondered that he should feel disinclined to put forth any theory of his own, committed as he already is to the statements on the direction, altitude and velocity of migration flight as detailed in previous pages. No theory that could be devised would be likely, in all its details, to fit in with such various speculations, and he may well look upon the task as hopeless." Later on (p. 120) Herr Gätke's theories of



migration flight of a flock of birds from their breeding grounds in the northeast to their winter quarters in the southwest of Europe is thus acutely summarized: "Let us suppose that we are dealing with one of the 'many hundreds' which pass Heligoland on their journeys from 'far eastern Asia.' It is dusk—and the time for departure has arrived. Without more flocking together than has accidentally taken place during feeding time, all the residents in a particular area set out from their breeding grounds on a journey of two thousand miles or more. No food has been taken for some hours, and the winds being unfavourable near the surface of the earth, all rise to a height of at least 20,000 feet, whence guided by some unknown power, and at a speed of 150 to 200 miles an hour, they set out on their rushing and undeviating flight to the west of Europe. Here, however, the direction of the latter must be altered and a turn to the south executed in mid-air, which carries them, after a further flight, to the neighborhood of Heligoland, where again a second turn is accomplished and the remainder of the journey is performed in the old undeviating westerly direction, until dawn finds them at their goal on the shores of England; neither tired nor hungry after their great exertions." This is a fair statement of Herr Gätke's theories on this subject, and needs no comment to render their absurdity apparent to any thoughtful ornithologist.

"In estimating the value of his [Herr Gätke's] theories," says Mr. Whitlock (p. vi), "it must not be forgotten that they are based on observations conducted in a very limited and somewhat exceptionally situated area; outside this area his personal experience seems to have been very small." (*Cf.* Auk, XIII, 1896, p. 138, 139). Add to this his lack of scientific training, his evident but doubtless unconscious tendency to exaggeration, and an imaginative turn of mind, and we need not seek further for an explanation of the overdrawn statements and ridiculous speculations found in 'Heligoland.'

Mr. Whitlock has done good service to ornithology in publishing his, on the whole, temperate, and well-considered critique of a work that is both a valuable and an unfortunate contribution to ornithology, as the exaggerations and wild speculations it contains are the parts seized upon with greatest avidity by the thoughtless compiler for introduction broadcast into the popular literature of ornithology. It need hardly be said, in conclusion, that Mr. Whitlock's book will not prove very agreeable reading matter to the many who have idealized and idolized the author of 'Heligoland.'—J. A. A.

**Suchetet on Hybrids among Wild Birds.**<sup>1</sup>—In a thick octavo volume of 1154 pages Mr. Suchetet has brought together all the facts he has been

<sup>1</sup> Des | Hybrides | à | l'état sauvage | — | Règne Animal | — | Tome Premier | Classe des Oiseaux | Par | André Suchetet. | . . . [Motto] | — | Paris | Libraire J.-B. Baillière et Fils | 19, Rue Hautefeuille, 19 | 1897 — Large 8vo, pp. clii + 1002. (Price, 28 fr.)

able to gather respecting hybridity among birds in a state of nature. These cases number 271, of which, however, some are doubtful. Of these 189 are crosses between species, and 82 between 'races' or 'varieties.' The total number of species involved is 166, and of varieties, 49. The evidence in each case is fully presented and its merits duly weighed. This work has occupied the author for ten years, and the amount of labor involved is certainly immense. The list of works and papers cited exceeds 1100, and the list of persons with whom the author has corresponded includes the names of nearly 500 more or less well-known naturalists, to whom reference is made in the course of the work. He further gives a list of 85 museums and collections with which he has been in communication, which contain hybrids or reputed hybrids, with an indication of the character of each specimen. These number 236, of which 52 are Passerine, 1 Ralline, 2 Columbine, 75 Anatine, and 106 Galline.

The work is divided into five parts, which have appeared at intervals from 1890 to the present time. Thus Part I, Gallinacés et Colombes (pp. 3-107), was issued in 1890; Part II, Palmipèdes et Echassiers (pp. 109-177), in 1891; Part III, Passereaux (pp. 179-451), in 1892<sup>1</sup>; Part IV, Accipitres et Perroquets (pp. 453-472), in 1893; Part V, Additions, Corrections et Examens d'après nature, pp. 473-873, in 1895. Part VI, Nouvelles Additions (pp. 907-990), as well the alphabetic list of authors cited (pp. 875-905), with the Introduction (pp. iii-clii) and contents are now added. The introduction gives an historical account of the subject, with a summary of the views of naturalists, ancient and modern, and discusses at length the value of fertility or infertility in hybrids as a test of specific identity.

As said in our review of Part III, the work has involved a vast amount of laborious research, and gives apparently an excellent summary of the literature of the subject. It therefore affords a mine of information for those who wish to pursue the subject of hybridity among birds.

The present volume is to be followed by a second on hybridity among insects and in fishes. The author also proposes to publish an annual supplement to the volume on birds, giving the new facts as they appear, and solicits aid in the work from other observers. He also has given notice that as soon as he receives enough subscriptions to warrant the undertaking he will begin the publication of life-size colored illustrations of about 200 of the hybrids he has made the subject of study. — J. A. A.

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<sup>1</sup> Reviewed in this journal, IX, 1892, pp. 382, 383.

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## CORRESPONDENCE.

### The Treatment of 'Nomina Nuda.'

EDITORS OF 'THE AUK':—

*Dear Sirs:*—I should like to ask, through the pages of 'The Auk,' for further expressions of opinion concerning the diverse treatment to which *nomina nuda* are now subjected. The matter is one of such importance to those who deal hand-to-hand with the many-sided aspects of nomenclature that every effort should be made to bring order out of the present chaos.

A *nomen nudum* is a name—zoölogical or botanical, generic, subgeneric, specific or subspecific—which has not been defined and published in accordance with the laws of binomial nomenclature. Such names are generally recognized as without status, and therefore as in no way invalidating the subsequent application of the same term to another organism, or to the organism intended by the original writer when this, as is often the case, can be ascertained. It naturally follows that a *nomen nudum*, having no real status in nomenclature, may be disregarded; and if a subsequent author, wittingly or unwittingly, uses the same name again the

responsibility rests with him. With published nomina nuda such is the nearly uniform practice, from which there is little if any departure. If, on the contrary, a nomen nudum has never been published, if it exists only on a collector's field label, if it has never seen the light except through the alcohol of a museum jar, if it lies buried in some posthumous or half forgotten manuscript, if it has been suggested verbally only, and an author adopts it and defines it, and publishes it, then individual opinion begins to run riot. Instead of agreeing that an unpublished nomen nudum should be treated exactly like a published one, many writers consider that it has special prerogatives, and that its existence, to a certain degree at least, precludes the free subsequent use of the term. In other words, the writer who adopts a manuscript name is not universally conceded to be authority for the printed nomenclatural unit, although he alone is responsible for its publication, and in nine cases out of ten the paper in which it is printed will appear in indexes and bibliographies under his name only.<sup>1</sup> To some writers it seems proper that the responsibility for a manuscript name when published should be equally shared by the publisher and the writer of the label, arranger of museum specimens, or writer of the laid aside manuscript. Others, and among them the majority of botanists, ignore the publisher. Comparatively few show their regard for consistency by a uniform treatment of all nomina nuda, whether published or not.

This confusing lack of uniformity probably arises from two principal causes,—first, that the writers of manuscript names are often our personal friends, while the publishers of nomina nuda are most of them dead, and second, that it is difficult to keep clearly and constantly in mind that *nomenclature deals not with history, not with botany, not with zoölogy, but with names*, and that therefore the authority for a name has nothing whatever to do with the authority for a species. With regard to the first of these disturbing causes, if such it really be, nothing need be said. The second, however, which is undoubtedly by far the more potent, demands careful consideration, as it strikes at the root of the whole question of the citation of authority.

Unless we admit, as I fear few of us are honest enough to do, that the principal object in writing the name of an author after a nomenclatural compound is to tickle worldly vanity, we must, to defend this custom, show that it is of some advantage to systematic zoölogy or botany as a whole,

<sup>1</sup> A peculiarly apt example is furnished by a recent paper in the 'Proceedings' of the U. S. National Museum (Vol. XIX No. 1115). Here twenty-two new fish are described, "each in the name of the person responsible for the determination and description." Among this small number of species no less than eleven authorities are quoted in addition to the one which appears at the head of the article (this stands for only three!), and which—so I am informed by a member of the Publication Committee—will alone, according to current usage, be found in the index to the volume.



that is, that it is in some way an aid to those who have to deal with the enormously complicated and ever growing mass of binomial nomenclature. Such an aid the citation of authority undoubtedly is, but under one condition only — when it furnishes a clue to that cardinal event in the history of the name to which it is attached, its first published introduction to the scientific world. When the name of the authority cited fails to give this clue it is not only a useless encumbrance to memory, but also an actual addition to the inconveniences of our system of nomenclature. And this is the inevitable result of quoting the name of the writer of the nomen nudum instead of the publisher. To take a case in point: A few years ago Dr. J. A. Allen published a revision of a certain group of American chipmunks. Among the forms which he then for the first time described was one that Mr. C. H. Townsend had collected in Lower California and immediately recognized as new. On the labels of the specimens Mr. Townsend had written the specific name *obscurus*. This Dr. Allen adopted, and gave for authority 'Townsend MS.,' though the description and publication on which the name rests were wholly by himself. Suppose now that in a subsequent paper the name is mentioned as '*Tamias obscurus* Townsend,' a person not familiar with the trivial, so to speak, prenatal incidents of nomenclatural history — and no specialist can keep them all in mind — will waste time and patience in searching through Mr. Townsend's bibliography for a paper in which a chipmunk might have received a new name. When, after abandoning the false clue furnished by the citation he proceeds as he would have done in the first place had no authority been mentioned, and at length finds the original description in a paper by Dr. Allen, he may or may not feel repaid for his trouble by the discovery of the vaguely conveyed information that Mr. Townsend knew something about the animal before Dr. Allen named it. The citation '*Tamias obscurus* Allen,' on the other hand, leads unequivocally to the series of papers in which the name first appeared, and therefore very materially assists in tracing out its history.

While the tendency to quote the writer of a manuscript name as authority for the published term probably originated from the prevalent confusion of the authority for a name with the authority for a species or group, in reality no two things could be more unrelated than these, and as already stated it is with the first and the first only that nomenclature has to deal. A moment's reflection will show the truth of this assertion. No one regards Linnaeus, for instance, as authority for the specific discrimination of the many American birds whose systematic names are followed by the abbreviation 'Linn.' He simply took the species described under polynomial names by other authors and applied to them binomial designations. Similarly when a species is originally described under an untenable binomial, and the mistake is corrected by a subsequent author, the latter alone stands as authority for the name, although he did not discover the species or introduce it to zoölogy or botany. A well known instance is furnished by the name *Calamospiza melanocorys* Stejneger. The bird



which bears this name was discovered by J. K. Townsend, who named it *Fringilla bicolor*, unaware that Linnæus had previously applied the same name to another species. The mistake was detected many years later by Stejneger, who substituted for the untenable name *bicolor* the tenable name *melanocorys*. There are here three separate entities: (a) a large, black-and-white finch for whose discovery and description Townsend is responsible, (b) a specific name *bicolor* applied to this bird by Townsend, and (c) a specific name *melanocorys* applied to the same bird by Stejneger. The finch belongs to the realm of zoölogy, its discovery and first description to that of history, while the two names are the concern of nomenclature. As the earlier of these is untenable it is rejected in favor of the later, for which Stejneger alone is authority, regardless of the fact that he had nothing whatever to do with the discovery and description of that particular black-and-white finch to which he applied the name *melanocorys*. I have gone into considerable detail with this example, because, remarkably enough, it seems necessary to force home the truth that nomenclature is like a good shoemaker who sticks close to his last and busies himself with matters historical, botanical, and zoölogical so far only as they aid him in understanding and manipulating the materials of his calling.

If therefore the name of the discoverer of a species is of so little moment when he himself has published his discovery, why should it acquire importance when he has published nothing?

As I have attempted to show, the citation of the writer of a manuscript name, when he is not also the publisher, accomplishes no purpose in harmony with the aims of nomenclature. The double citation of writer and publisher together introduces an irrelevant element, and where the burden to memory is already so great, any addition without compensating gain is to be avoided. Finally the single citation of the publisher alone fulfils an important end.

Very truly yours,

GERRIT S. MILLER, JR.

U. S. Department of Agriculture, Washington, D. C.

## NOTES AND NEWS.

THE FIFTEENTH ANNUAL CONGRESS of the American Ornithologists' Union will be held at the American Museum of Natural History in New York city, beginning on the evening of Monday, November 8, 1897, when will be held the session for the election of officers and members and the transaction of routine business. The following three days will be given to public sessions for the reading and discussion of scientific papers. Members intending to present papers are requested to send the titles of the same to the Secretary, Mr. John H. Sage, Portland, Conn., in time to reach him prior to November 5, in order to facilitate the preparation of the program of papers to be read before the Congress.

MR. LOUIS W. BROKAW, an Associate Member of the American Ornithologist's Union, died at his home at Carmel, Ind., Sept. 3, 1897, after a brief illness.

SIR EDWARD NEWTON, a younger brother of Professor Alfred Newton, died at Lowestoft, England, April 25, 1897, in his 65th year, having been born in November, 1832. He was one of the founders and original members of the British Ornithologists' Union, and "one of the eight who formulated the idea of the Union and of 'The Ibis,'" and was one of the original twenty members to which the British Ornithologists' Union was for a time strictly limited. In 1859 he published in 'The Ibis,' in conjunction with his brother Alfred, an important paper on the birds of St. Croix, West Indies. Later (1862-69) he published various papers and reports on the birds of Madagascar and the Mascarene Islands, including descriptions of many new species, discovered during his official residence at Mauritius as Colonial Secretary. Although harassed and overburdened with official duties while Lieut.-Governor and Colonial Secretary of Jamaica (1877-1883), he found time to form a nearly complete collection of the birds of the island, his observations and collection forming the basis of his well-known 'List of the Birds of Jamaica,' published in the 'Handbook of Jamaica,' issued in 1881. His researches concerning the extinct bird fauna of the Mascarenes will ever give his name a prominent place in the history of that subject.

A UNIQUE and exceedingly appropriate memorial to the late Henry Davis Minot consists of a park of some fifty acres in extent, recently transferred by his four brothers, William, Charles S., Robert, and Lawrence Minot, in accordance with the wishes of their father, the late William Minot, to the trustees of public reservations in Massachusetts, to be maintained as a wild park, "for the use of the public forever." This park, to be known as Mount Anne Park, consists of a tract of about fifty acres of beautiful woodland near the village of West Gloucester, Mass. It

includes Mount Anne, or Thompson's Mountain, the highest point on the North Shore, some 225 feet above the sea, — a pine-clad, granite summit in the midst of a forest wilderness. The park is otherwise charmingly diversified, being a spot of exceptional natural beauty.

WE WOULD call especial attention to the efforts of the Audubon Monument Association of New Orleans to raise funds for the erection of a Monument to the famous ornithologist John James Audubon, in Audubon Park, that city. To this end the Association offers for sale a well written and tastefully bound volume of some eighty pages containing a sketch of Audubon's life by Mrs. Mary Fluker Bradford of New Orleans.

This work can be obtained of the Audubon Monument Association of New Orleans for the price of one dollar. It is not only worth this sum but every purchaser will have the satisfaction of helping a good cause.

HOUGHTON, MIFFLIN AND COMPANY announce among their Autumn publications 'Birds of Village and Field,' by Florence A. Merriam. The book is intended for beginners and, we are told, "is planned primarily to meet the needs of persons who are interested in birds but who know very little about them, — to aid them, without a gun, to know and name the common birds around them." The work will have nearly 300 illustrations.

RESPECTING the collection of birds' eggs in the British Museum, we take the following from 'The Ibis,' for July, 1897: "The great collection of birds'-eggs in the British Museum, which was arranged under the direction of Seebohm shortly before his death, contains about 48,000 specimens, and is, no doubt, by far the most extensive collection of these objects in existence. It is contained in 35 cabinets, with about 24 drawers in each cabinet, and follows the systematic order of the Bird Catalogue. In it are comprised, besides the old collection, the large collections of Gould, Hume, Salvin and Godman, and Seebohm. It is thus rich in Indian, Palæarctic, Australian, and Central American eggs, but comparatively poor in South American and African forms. A Handbook of General Oology, based upon this splendid series, would be a most valuable work, and will, we trust, shortly be undertaken. Nothing of the sort has been published since the appearance of Des Murs's 'Traité Général d'Oologie Ornithologique,' in 1860."

From the same authority we learn that the Gätke Collection of birds and eggs, and the library belonging therewith, has become the property of the Prussian State, and placed under the control of the Royal Biological Institution in Heligoland; it will soon be removed to the new Heligoland Museum and be made accessible to the public.

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## ERRATA.

Page 317, line 3, for Chas. U. Holden read Chas. N. Holden.

" " " 6, " Altie read Attie.

" 324 " 37, " Mr. Otto Herman Behr read Messrs. Otto and Herman Behr.

Page 326 line 6, for WITMER STONE read H. W. FOWLER.

For additional Errata see *antea*, p. 258.





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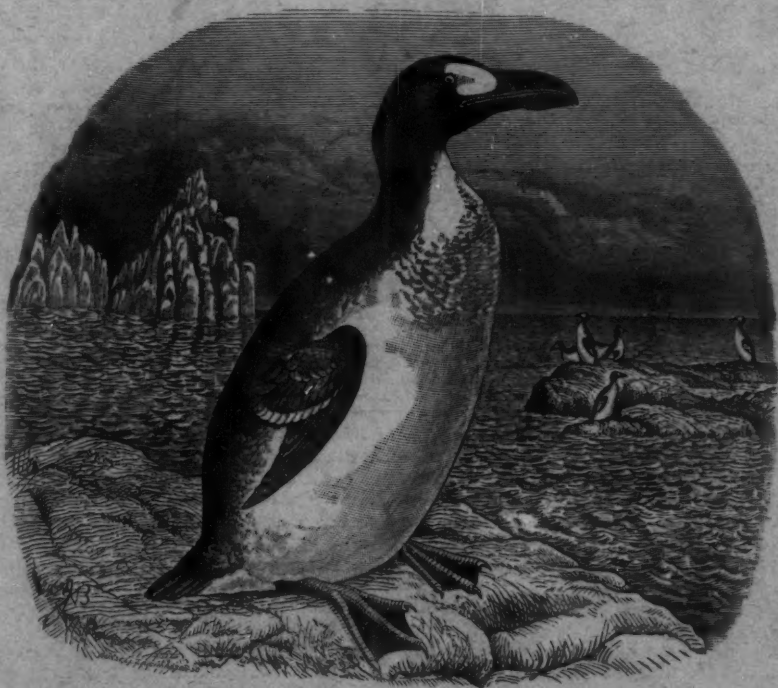
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